

PURCHASING

APRIL, 1953



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APRIL, 1953

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PURCHASING PREVIEWS

A WASHINGTON REPORT FOR PURCHASING AGENTS

April 1, 1953

PRODUCTION LEVELS HIGH

Initial efforts of the new Administration have been pointed toward elimination of materials and price controls—also toward more efficient administration of Government services and better housekeeping in Government agencies.

Detailed regulation of materials distribution has been abandoned in favor of a priority system for the military and for atomic energy requirements, to become effective at midyear. Materials supply is expected to be ample for both military and civilian requirements.

Military needs for materials can be anticipated. What the civilian take will be depends wholly on the public buying appetite.

Producers of all types of consumer goods have been girding themselves for a large volume of production and for aggressive sales competition. If consumer purchasing reaches record levels, a severe strain on the supply of materials is possible. Personal savings are at a high level, almost 25% higher than at midyear 1952—also wage levels and employment levels are high.

CONSUMER DEMAND ACTIVE

These factors make a high level of consumer goods merchandising possible. If such a market develops, it will be accompanied by a continued upward pressure on materials prices.

At the consumer level, there will be considerable shopping for both quality and price, which will create sharp pressures for economy in purchasing of materials, substitution of a lower cost material or component without sacrifice of the quality of the finished product. This seems virtually impossible to the layman, but has become a standard technique in the purchasing profession.

The effort to bring lower prices to the consumer despite higher cost factors in production, will create pressures on the margins allowed distributors. The standard trade discounts will prevail, but the distributors will be in the position of cutting into their margin through trade allowances of various kinds.

This will be especially marked in the automotive trade, where for the first time in several years, unrestricted production will be possible, and the industry will become more competitive than it has been for 12 years.

HIGH LEVEL FOR U.S. ECONOMY DURING '53

Overall economic outlook for the remainder of this year is for a high level of military expenditures. Despite cutbacks, stretchouts and economies, the U. S. aircraft industry is scheduled to reach its peak production and employment during the next nine months.

This will be the big year in the post-World War II delivery of defense materiel.

Interpreting this outlook in terms of employment levels, it means that industrial employment is now—and is likely to remain—at a peak. Industrial employment is at the highest level since World War II.

Aircraft, ordnance and electronics equipment plants still are adding to their employment force, but are in the process of leveling off.

Economics at the farm level are in a period of adjustment. Prices of farm commodities have been dropping.

The declining trend set in more than a year ago, and has been obscured by the policy of the Government of taking surpluses off the market—also by the farmers, who have compensated for the declining price level by increasing their crop output.

Result has been the accumulation of Government-owned surplus in huge quantities at a time when world food supplies are also at record high levels. As a consequence, there is neither an economic domestic market demand for the surplus, nor a sound export market.

Policy of the new Administration toward the accumulated surplus and declining price level of farm commodities is being closely watched as a clue toward what may be the policy toward a parallel industrial condition.



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INDUSTRIAL ADJUSTMENTS LIKELY

Eisenhower Administration leaders are firm believers in uncontrolled markets—in letting supply and demand find a normal balance without the numerous artifices that have been introduced during the last 20 years.

At the same time, while there is a reluctance toward the use of artificial stimulants and controls, there are already indications that to pull all the props out at once would seriously weaken, if not collapse, the whole structure.

While industrial conditions do not parallel the farm situation, the large accumulation of materials stockpiles and the unprecedented expansion of basic industry can be compared to the surpluses of agricultural commodities and to the greatly expanded acreage under cultivation.

Another parallel is that the expansion in agricultural output was sponsored and stimulated by the Truman Administration as a defense measure, just as the stockpiling program and industrial expansion were justified on the same basis.

Leading spokesmen of the new Administration do not minimize these problems, nor is there any disposition to go back to an era which was labeled politically as "rugged individualism". There is, however, the thinking that adjustments are not only inevitable, but actually have a salutary effect on the whole economic structure.

The problem is to hold the adjustments to a moderate decline—and not permit a run-away spiral.

Adjustments are anticipated in the rate of home-building. In the immediate post-war period, there was a surge of new house construction, reaching a climax in 1950 with 1,396,000 new house starts. A measure of comparison is the housing start level of 93,000 units for the entire year in 1933.

The rate of new family formations is estimated at roughly 600,000 to 800,000, and this level is indicative of the valid demand for new home construction. At some point in the next year, or beyond, the rate of new home construction is likely to decline.

It is almost axiomatic that Government intervention in the form of highly subsidized public housing, or uneconomic interest rates or down payment rates, could artificially buoy the demand for housing for a short period of time.

The Eisenhower policy as currently expressed is not to intervene in the normal supply-demand relationship.

ECONOMICS TO BE DIVORCED FROM POLITICAL CONSIDERATIONS

Just as some leveling off and decline is anticipated in new house construction, the current thinking is that other adjustments will occur.

The Administration is not wedded to the concept that there must be a constant expansion in all levels on the economy based on political considerations. Whatever expansion is necessary will have to be justifiable on an economic basis—such as the growth of the population, the development of new industrial areas, the establishment of new industry, and the creation and invention of new products.

Another strong concept which the Administration leaders have been following is that the well-being of the consumer must be measured in "real wages", not just an increasing payroll. Labor union leaders have been in the forefront criticizing the fact that their wage gains have been nullified by higher living costs.

"Real wages" is the only proper measure of purchasing power, and "real wages" can be increased only through increasing productivity.

What happens, however, when a decline sets in? This is hardly an academic question, as at some point in 1954 there will be a decline in defense spending.

To this question, the leaders of the new Administration point out that the area of adjustment will not be nearly as spectacular as was the case immediately after World War II. Then defense industry comprised a major percentage segment of the total economy, and civilian industry but a relatively small portion.

In our present circumstances, defense production is not nearly as large as it was at the peak of World War II. Also it will not be completely scuttled, as was the case immediately after World War II. Also civilian industry is at a high level, and is booming.

Idea is that adjustment should not be as difficult as it was after World War II. This is an over-simplified attitude, but has merit.



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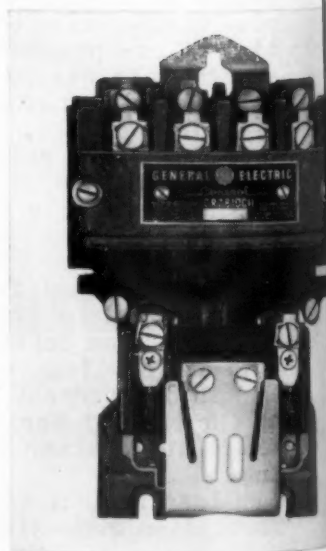
CONTROL TRANSFORMERS for operator protection, extra overload relay for motor protection, and control relays are available as standard components.

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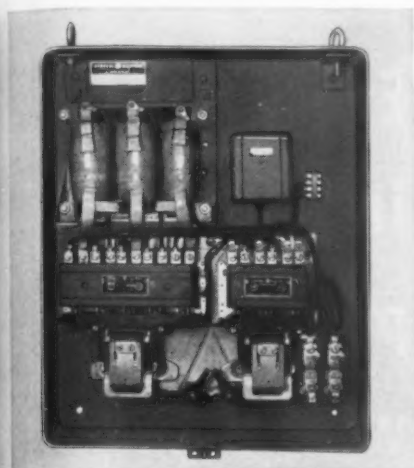
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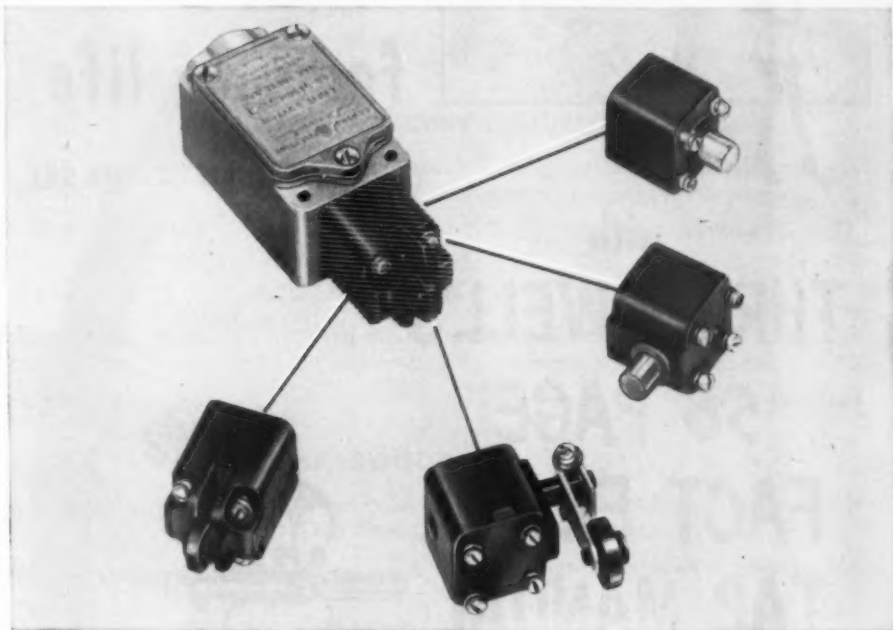
Available in air-break and oil-immersed designs, this hard-working starter for motors up to 250 hp utilizes the most modern materials and methods to give exactly the kind of operation you require for years to come.



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This compact unit is part of the new G-E line of oiltight push buttons for use on a-c or d-c. It can be mounted in the standard G-E stations or enclosures or directly on the machine to be controlled. Ask for Bulletin GEA-5779 on the entire line of G-E oiltight push buttons.

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switch on machine tools, battery truck lift platforms, on small machines as a pilot device, and as a safety interlock on enclosing cases. Operates on a-c or d-c. Double-throw snap-action contact is easily accessible for wiring, and there is adequate room within the cast aluminum case for connecting to terminals, which are extra large. Bulletin GEA-5707.

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General Electric Company

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28. V-BELTS

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30. WELDING

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31. WIRE ROPE

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March 12, 1953

Continental Screw Company
New Bedford, Massachusetts

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This is to inform you of the very gratifying results which we have experienced since using your Holtite taped screws in our operation.

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Packaging Unit	Packaging Labor	Total
Bag \$8.75M	\$2.40M	\$11.15M
Envelope 1.90M	2.05M	3.95M
Taping .90M	-0-	.90M

This table tells a story, and it is indeed a good one. However, it does not point out the many errors of mixing and improper selection which taped screws have eliminated in our own handling.

We sincerely appreciate the personal touch and follow-up which are characteristic of Continental in supplying us with a product unsurpassed in quality.

Yours very truly,

THE AUER REGISTER COMPANY

R. E. Brumbaugh
Secretary

You too can count on Continental.



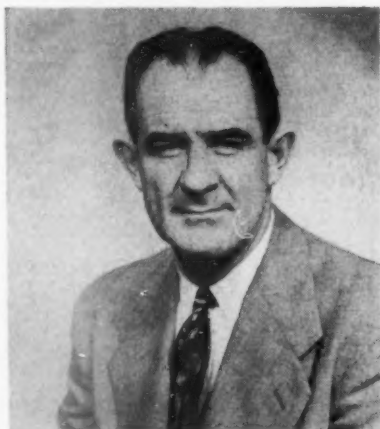
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CONTINENTAL SCREW COMPANY, NEW BEDFORD, MASS., U. S. A.

NEWS OF YOUR Suppliers



Bay State Abrasive Products Company, Westboro, Mass., has appointed Elden L. Auker sales manager. Mr.



Elden L. Auker

Auker, who is a former big league baseball player, pitched for the Detroit Tigers in 1934 and 1935, when the club won the American League Championships and went on to win the World Series in 1935. He also played with the Boston Red Sox and the St. Louis Browns. Prior to his recent appointment, Mr. Auker had been the district manager of Bay State's Detroit office and warehouse.

Heppenstall Company, Pittsburgh, Pa., has announced several new divisional assignments within its sales department. J. O. Phillips has been named assistant to the general manager of sales. R. B. Heppenstall, Jr. has been appointed manager of market research. Harold F. Wood, Jr. is manager of knife sales. Ward E. Duchene is manager of material handling sales.

John P. Andrews has joined the Lukenweld division of **Lukens Steel Company** as a sales engineer. Mr. Andrews has had 13 years experience in the oil, chemical and rubber industries.

Riegel Paper Corporation, New York City, has appointed W. J. Garrity to a newly created executive post in the sales department. Mr. Garrity recently resigned as vice president of The Munising Paper Company, Chicago, Ill. Prior to joining Munising in 1934, he was with Eastern Manufacturing Company, now the Eastern Corporation.

O. D. Lloyd has been appointed sales manager of the Louisville Corrugated Division of the **General Box Company**, Des Plaines, Ill. He formerly was manager of the Cleated Corrugated Department of the Cornell Paperboard Products Company, Milwaukee, Wis.

Simonds Abrasive Company, Philadelphia, Pa., has appointed E. F. Mitchell Detroit district manager. He has been with the company since 1937 and has been a sales representative in the Michigan territory during that time.

R. B. Warren has been named manager of Industrial Products departments, **Goodyear Tire & Rubber Com-**



R. B. Warren

pany, Akron, Ohio. Mr. Warren joined the company in 1927 and immediately prior to his new appointment was Southern sales manager.

Fred Pritchard has been appointed representative, Cincinnati, Ohio office of **Brown & Sharpe Mfg. Company**, Providence, R. I. Howard K. Jackson, who has been on special assignment in Cincinnati, has retired after 34 years' service with the company.

B. Baxter Pearson has been appointed manager of the newly-created branch sales office in St. Louis, Mo. of **Mon-santo Chemical Company's** organic chemicals division. Mr. Pearson, who has been manager of the Company's Portland branch office since 1947, will be succeeded there by Paul B. Welch, Jr., who will transfer from the Los Angeles office.

Norton Company, Worcester, Mass., has announced several new personnel appointments and reassignments. Warren R. Spofford has been assigned to take over a new metropolitan Boston territory. Sidney B. Wetherhead now assumes complete responsibility for the eastern Massachusetts area, excluding Boston. Gordon T. Rideout has been appointed abrasive engineer and takes over the Worcester County territory, replacing Mr. Spofford. Evan C. Luce has been appointed sales engineer, taking over the responsibilities vacated by Mr. Rideout. David H. Paul, who recently returned to the company after serving 14 months with the U. S. Navy, has been appointed field engineer in the Philadelphia, Pa. district.

James R. McCutcheon, Jr., has been appointed sales manager of the Valve Division of **Homestead Valve Manufacturing Company**, Coraopolis, Pa. For the past seven years he has served as district representative for American Car and Foundry Company's Valve Division in Western Pennsylvania, Ohio, Kentucky and West Virginia. Mr. McCutcheon will make his headquarters in Homestead Valve's main plant in Coraopolis.



Peter Wojtul

Continental Can Company, New York City, has appointed Peter Wojtul to the newly-created post of director of sales. Mr. Wojtul, who formerly was general manager of sales, Metal Division, will advise and assist all Continental production divisions in their sales activities.

(Please turn to page 24)

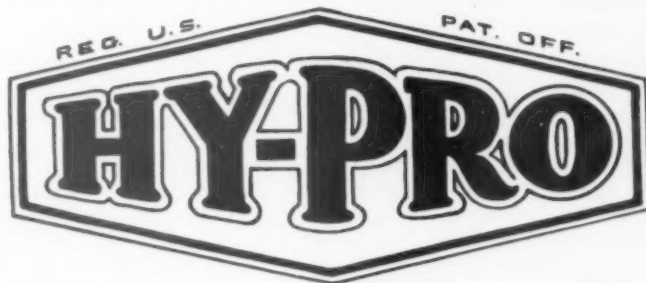
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Piedmont 5-4337

10428 W. McNichols Rd.
DETROIT 21, MICH.
University 4-1077

6141 North Elston Ave.
CHICAGO, ILL.
Newcastle 1-6486

Columbia Steel & Shafting Company, Pittsburgh, Pa., has appointed Ross Saylor sales associate. He previously was associated with the Edgcomb Steel Company of New England and prior to that was associated with Edgar T. Ward's Sons Company and the Sumner Tubing Company.

Lincoln Engineering Company, St. Louis, Mo., has appointed Albert J. Gruenewald sales manager of its Industrial Division. Mr. Gruenewald,



Albert J. Gruenewald

formerly a sales engineer for the company, replaces T. V. Picraux, who has been named Production Manager of both the company's plants.

The Russell Manufacturing Company, Middletown, Conn., has appointed Leo S. Sullivan vice president in charge of the automotive and aero sales division, and Peter F. Madsen vice president in charge of the belting sales division.

Harold E. Gumbart has been named to the new position of western district sales representative for **Corning Glass Works**, Corning, N. Y. Mr. Gumbart will have his headquarters in Los Angeles, Calif. He joined Corning in 1941, starting in the insulation division as a sales engineer.

Lincoln Engineering Company, St. Louis, Mo., has appointed Robert E. Redenbaugh manager of its original equipment division. He will direct sales of the company's lubricant application devices to the original equipment market. He joined the company in 1942.

The Ohmart Corporation, Cincinnati, Ohio, has announced the opening of district sales offices in Chicago, Ill., and Dallas, Texas. Lester F. Boss directs the new Chicago office and the Dallas territory is under the supervision of John W. Godbey.

Utica Drop Forge and Tool Corporation, Utica, N. Y., has appointed Paul L. Thornburg as factory representative for the company's line of tools in the Mid-South area of Virginia, North Carolina, South Carolina and Tennessee.

William Peist is now covering the Western trading area for **Gilman Paper Company** out of the company's Chicago office in the Daily News Building. He will be responsible to E. A. Kendler for the sale of Gilman gummed tape, wrapping and converting papers. Kenneth Rawson is now covering the eastern territory for Gilman. He formerly was New York and New England representative for the Kraft Bag Corporation, Gilman subsidiary. Lawrence K. Norton, who joined Gilman from the Minnesota Mining and Manufacturing Company, has been named assistant to Harry C. Lawless, vice president and director of sales for Gilman Paper Company, New York City.

All-State Welding Alloys Company, Inc., New York City, has named Walter E. Palmer sales manager. He will be responsible for the coordination of sales and service to users and distributors of All-State alloys and fluxes in all areas.

Industrial Tape Corporation, New Brunswick, N. J., has opened new warehouse facilities at 107 Pittsburgh Street, Dallas, Texas, under the supervision of William Cooker. The operation will handle distribution of the company's line of tapes.

Wagner Brothers, Inc., Detroit, Mich., has added three sales representatives to service their Eastern Michigan territory, which includes Detroit and Toledo. The new men are Larry Glynn, Henry Pfeuffer and Herb Marx.

The Claud S. Gordon Company, Chicago, Ill., has announced the appointment of Claude A. Gates as its representative in the New York City, Northern New Jersey, Long Island, Westchester, and Western Connecticut areas. Mr. Gates formerly was a vice president of Wheelco Instruments Company.

The Youngstown Sheet and Tube Company, Youngstown, Ohio, has transferred Frank C. Sterling from its Yolo sales office, Youngstown, to its district sales office in Pittsburgh, Pa.

Mesta Machine Company, Pittsburgh, Pa., has appointed William C. Wilson sales manager. Prior to joining Mesta, he was associated with the Weirton Steel Company and the Wheeling Steel Corporation.

H. J. Howerth, Jr. has been named assistant sales manager of the Wayne division of **Gar Wood Industries, Inc.**, Detroit, Mich. Mr. Howerth, who served as chief sales engineer for the Wayne division until his recall to military service two years ago, has just returned from a year in Korea where he was a captain with the Army Ordnance Corps.

Bowers Battery and Spark Plug Company, Reading, Pa., has appointed three industrial battery specification engineers. They are James J. Law, Jr., R. E. Jaccard and James Peterman.

Worcester Pressed Steel Company, Worcester, Mass., has appointed William G. Fienemann assistant sales manager in addition to his duties as product development manager. He has been with the company two and a half years. John E. King has been appointed assistant to the sales manager of the company, widening his general sales responsibilities. Mr. King has been with the company 11 years.

Bailey Meter Company, Cleveland, Ohio, has appointed A. L. Danielson manager of its branch office in Denver, Colo. He succeeds G. M. Wallace, who has been appointed assistant sales manager with headquarters in Cleveland.

Pembroke W. Taylor has been named manager, distributor sales of **The Riverside Metal Company**, Riverside, N. J. Mr. Taylor, formerly with the Warehouse Branch, Copper Division, in the National Production Authority, was with Revere Copper and Brass, Inc., for 20 years, prior to his NPA service.

The Pipe Machinery Company, Cleveland, Ohio, has appointed Russell L. Gergen sales manager of the Gage Division. Mr. Gergen has been with the company 12 years and formerly was sales engineer.

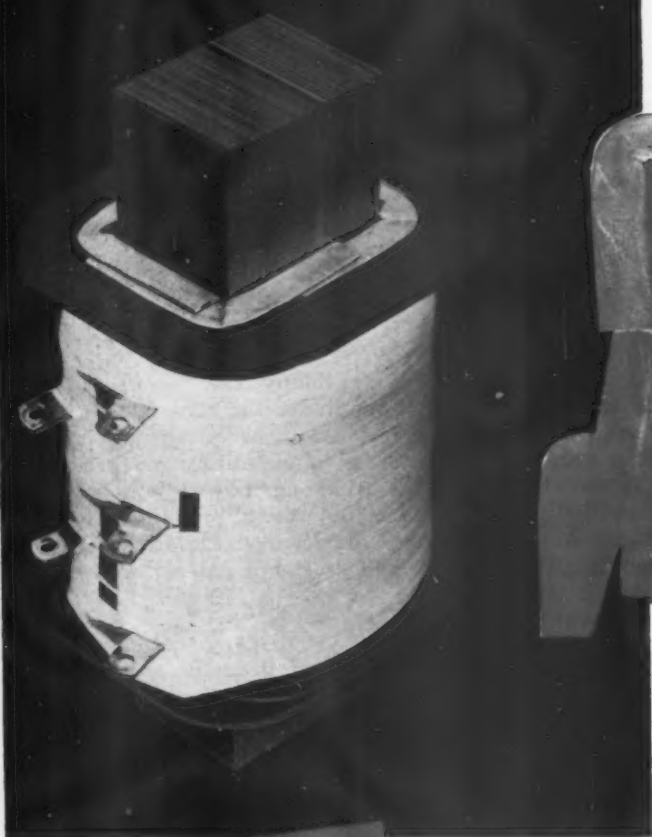
Titeflex, Inc., Newark N. J., has appointed John J. Phillips to the post of vice president in charge of sales and



John J. Phillips

engineering. Mr. Phillips joined Titeflex in 1940 and became chief engineer in 1949. In his new position, he will consolidate and coordinate the company's sales activities with its engineering operations.

Devon W. Fryback has been named sales manager of the Eastern region for the Industrial Division of **Minneapolis-Honeywell Regulator Company**, Philadelphia, Pa. Mr. Fryback has been with Honeywell since 1927. O. B. Pyle, Jr., who has been with the company 24 years, has been named industrial manager of the Mid-Atlantic area, and Edward J. Klein has been appointed industrial manager for the firm's Philadelphia branch office.



Formed pieces of tough, National Vulcanized Fibre, with exceptionally high dielectric strength, are used to make this universal coil form. It is expandable to conform to cores of various sizes.

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Available in various grades and colors; and in sheets, rods, tubes and special shapes. Write for detailed literature and engineering service information—

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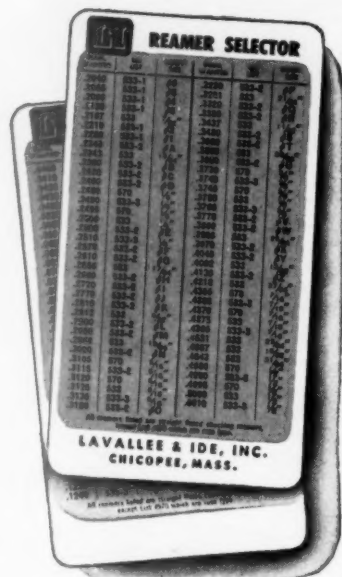
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F.O.B.



FILOSOFY OF BUYING

PPRICE decontrol poses the major problem of resetting prices in a relatively free market, which isn't exactly as simple as it sounds. The popular conception is that the law of supply and demand will automatically adjust the situation, but this oversimplified concept overlooks the fact that the law is properly stated in terms of personal factors, and not in cold, impersonal statistics.

Supply isn't just a quantity of goods, but the *willingness* to sell at a given price level.

Demand isn't a predetermined per capita amount, but the *desire* and *willingness* to buy, further modified by the ability to pay, which also vary with the price level.

Furthermore, with some commodities and products bumping against established price ceilings while others have been selling substantially below the statutory maximum levels, indicates a period of considerable uncertainty and the safe prediction that price movements will be divergent, selective, and sometimes contradictory in viewing the situation as a whole—which is one of the characteristics of a free market.

So the Associated Press analysts are quite correct in stating that purchasing agents are going to sweat, and perhaps suffer a number of headaches, before the situation is resolved. And that goes for sellers, too. But it will be resolved as buyers and sellers get together, and on the whole it should result in a healthier and more active economy. While some producers may hold goods temporarily off the market in the expectation of a rising trend, or just to see which way the trend will go, as is their privilege, potential supply of almost all goods seems ample. And no one has yet set a ceiling on demand in our way of life.

ONE factor that cannot be overlooked in this connection is the fact that decontrol in this country doesn't necessarily establish a free

market. Many raw materials will still be under the control of foreign governments in producing areas, both as to quantities and price, so that American buyers will have to work out their procurement and price arrangements in a market that is half free and half controlled.

WE had dramatic evidence of this in recent weeks when an economic research organization asked us for the names of several top-flight purchasing men who might be in a position to contribute authoritative opinion in a current study. Of the six top names on our list, four were found to be off in Europe or South America, diligently negotiating with primary sources of supply.

ULTIMATE consumers, as well as institutional purchasing agents, felt pleasant repercussions of this international trade in the influx of New Zealand beef since the first of the year, at prices 12 to 15 cents under the prevailing domestic market. The State of Rhode Island, for example, reported a saving of \$4,300 in January alone, through purchase of 17 tons of the imported meat, and diners at the state institutions got their teeth into a juicy steak for the first time in many moons. Domestic packers are obviously less happy about this development. It promises to be one of the important items of evidence, both pro and con, in the discussion prompted by Henry Ford's advocacy of really free international trade.

WHO makes the rules that govern or affect the conduct of business? Don't blame it all on the legislators. A report from Lansing, where the 67th Michigan Legislature went into session some weeks ago, informs us that the lobbyists outnumber the legislators by 3 to 1. There are 289 of these licensed

"legislative agents", representing all sorts of trade, labor, municipal, institutional, professional, and industrial groups, officially qualified to coach from the sidelines, plus about 40 others making up a fringe group almost as active. In the idiom of the political writers, they are known as the "Third House" of the Legislature. Tenure in the "Third House" seems less hazardous than in the elective branches. There are at least two men with a service record of some 40 years on the job, and it is noted that many veterans of the lobby have a background and experience in legislation equaling or exceeding that of the oldest State official. As a matter of fact, this "Third House" has become a refuge and a career for several ex-legislators.

IF YOU are one of those who has been fascinated, or confused, or annoyed by the term "and/or" in legal and/or contract phraseology, you may be relieved to learn that the Georgia House of Representatives has unanimously passed a bill creating a new word "andor" to replace the former designation. The bill defines the new word by stating that it shall mean "either", "both", "or", "and", "and or or" and "and and or". Its sponsor, Rep. John Bell, explains that by eliminating the virgule (/) it also eliminates much confusion in interpreting legal documents. After mulling over the definition—especially the part about "or, and, and or or, and, and and or"—this reader finds himself slightly more confused than before.

WE have had some encouraging comment from readers on the revised form of the "Pulse of Business" insert section. The old title, "Where We Stand", had lost some of its meaning, for we no longer stand very long in any one place. We've included some additional information, and have recast the charts to show more clearly the flow and trends of markets and trade. You'll find it more useful than ever.

FOR the statistically minded, we repeat the warning not to overlook the recent changes made in the base and structure of the BLS Cost of Living index, because it isn't the same statistic you may have used in the past. There are rumors that the automobile workers, whose wage scale depends in part upon this index, are prepared to strike if necessary to prove this point.

YOU *Can* AVOID DIE COSTS COMPLETELY

On Your Next
STAMPING ORDER



Yes, you can — but it's not necessarily the best thing for you.

You want the lowest unit cost — for the life of the part, including re-runs. It may well be that our **Machine-Cut Method**, with no die cost, does work out best.

Or, it might better be our **Short Run Method**, using economical blanking dies and stock punches.

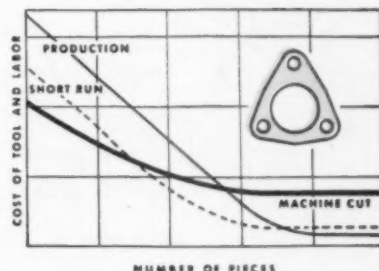
Sometimes, even with very short runs, it pays to use our **Production Method** with a standard die or our own surprisingly inexpensive Hecht-type tool.

In any case, the decision is a technical one based on many factors, not just length of run. You save money when the correct decision is made.

WE USE ALL THREE METHODS — LET US MAKE AN IMPARTIAL DECISION FOR YOU

For example, take the part illustrated. From 1-65 parts, our Machine-Cut Method is most economical. At 65 parts, the Short-Run Method is best until, at 7,000 units, the standard Production Method is most satisfactory.

These breaking points as charted vary drastically with every stamping, but the general principle remains the same.



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▲ The man behind the Saw says, "Give me Starrett Bands and Blades every time!"
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NOT acceptable"

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VIA _____ ITEM _____

Starrett band saw blades
Size: 10 ft. 5 in. circum., 3/8" wide,
.032" thick, 10 tooth, regular set

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TERMS: 30 DAYS PAYABLE 60 DAYS

PURCHASE ORDER NUMBER
1000000
DATE
10-3-51
ACCOUNT NO.
BY
T. J. Young
PRICE _____ AMOUNT _____

POLAROID CORPORATION
By *Paul C. Sullivan*
PRESIDENT

▲ This purchase order shown exactly as received by Chandler & Farquhar Company, Boston, from Polaroid Corporation, Cambridge, Mass.



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BAND SAWS



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DIAL INDICATORS • STEEL TAPES • PRECISION GROUND FLAT STOCK
HACKSAWS, BAND SAWS and BAND KNIVES

Buy
THROUGH YOUR
INDUSTRIAL
DISTRIBUTOR

Prompt delivery
Dependable service
Quality products

Good Purchasing — A Source for Working Capital

FINANCIAL commentators are stressing the fact that industry's need for "new money" and bank loans to provide working capital promises to be substantially lower in 1953 than for the past several years.

This is attributed to increased funds available from internal sources, reducing borrowing needs by a corresponding amount. Most important factor cited is the increase made available by depreciation allowances, thanks to accelerated amortization of defense facilities and the depreciation on other high cost plant and equipment, which will aggregate some \$2 billion more than last year. Another major factor is the increase in retained earnings, amounting to another billion dollars.

These two sources last year furnished less than 60% of the fixed and working capital needs of American industrial concerns. From present indications, they will provide 70% of the money requirements in 1953.

One factor that has not received the prominence it deserves is the terrific job that purchasing agents have done in inventory reduction and control. This is probably for the reason that inventory investment is generally listed on the other side of the ledger—a working capital requirement. But a dollar less in requirements is just as effective on the final balance sheet as the extra dollar available from other sources.

There are many examples which could be cited on this point. One recent case that comes to mind is that of the purchasing agent who came into an established medium sized company which had long been operating successfully on bank credit, and had been satisfied to do so in view of the fact that theirs was a seasonal product with a long cycle between production and ultimate sale. One of his first jobs was to revamp the inventory policy and practice, cutting that investment—without impairing the service of supply—by some \$400,000, almost exactly the amount of "normal" borrowings. It now appears that the company will not be borrowing in 1953, but will finance its long cycle through inventory savings alone.

Need working capital? Don't overlook the purchasing department as a potential—and potent—source.

Stuart F. Henrity

● The "third degree" is but a superficial scanning compared to the trials a ball bearing must withstand in New Departure's Research Laboratory. Here, under conditions which pack years of normal use into a short time, engineers determine how to make the best ball bearings even better.

Production bearings and experimental designs, alike, take this "torture treatment." They are subjected to overspeeds and overloads, intense heat and cold, day and night operation for protracted periods.

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Highlights

This issue's important features summarized for the busy reader



Some business policies and procedures are properly considered confidential, but when it comes to **Purchasing Department Policies**, which are the basis of buying decisions and govern relationships with requisitioning departments and with vendors, the most effective system is to put them clearly on the record, and to see that everyone concerned is fully informed. The manual quoted on page 71 does exactly that, and does it in unusually comprehensive form, with management approval to give the policies full authority, and with the necessary distribution to give them full effect. Here is a purchasing tool that you may find useful in your own company, and a model that will take the drudgery out of compiling your own manual even if your policies do not exactly coincide.

There are three ways of approaching the **Responsibility for Materials**—as a matter of technical proficiency, or as part of an organization plan, or as a function of executive leadership. Each has its place in the complete picture. If you are interested in making the most of your purchasing job, you will be interested in the stimulating analysis on page 90, by a management expert who has had close and understanding contact with purchasing men and their problems.

Defense production needs focused the spotlight of purchasing attention on the small **Job Machine Shop**, a type of enterprise having many advantages and many limitations—a blessing and a headache for the buyer seeking extra machine time and subcontracting facilities. The article on page 81 is based on extensive experience with such suppliers. It gives valuable pointers on how to evaluate job shops, and how to deal with them.



An interesting and effective system of **Purchasing and Materials Control** is described on page 77, incorporating some rather unusual features, not the least interesting of which is the way it was evolved. One striking feature of this system is that it is currently operating

successfully on a relatively small but rapidly growing volume of purchases, but is so conceived and planned that it will be equally applicable as purchase requirements are doubled or tripled in the foreseeable future.

This month's **Guest Editorial** (page 69) is contributed by A. W. Soell of St. Louis, N.A.P.A. Vice President for District 3. His theme is supplier relationships—the sort of constructive cooperation that makes for more profitable operations on the part of buyer and seller alike.

In most companies, the responsibility for **Expediting** rests with the purchasing department. Where the buying staff is small, this is frequently regarded as a secondary duty and must be handled from the office desk. Too frequently it is done without the full appreciation that the expeditor is dealing with people, and not merely with schedules and materials. The article on page 88 suggests a new approach, with a very practical application, for expediting is most effective in the long run when it is done with the human touch.



How well are **Traffic** problems handled in connection with your purchasing? The check list analysis on page 111 will give you the answer, and will indicate where and how improvements may be achieved.

What constitutes **Legal Delivery** of purchased goods? Does it require physical transfer of the merchandise, placing them in the hands of a carrier, giving title to the purchaser, or merely making them available for him to take? Pertinent court decisions on this important question are cited on page 86.

Are you making full use of these monthly departmental features compiled especially for the purchasing agent? The **Washington Previews** (page 13) keep you informed on current developments in governmental policy. Another section is devoted to **Office Equipment and Forms** (page 181). Informative **Trade Bulletins and Catalogs** listed on page 19 are yours for the asking.

COMING—NEXT MONTH

FIFTH ANNUAL "PURCHASE FOR PROFIT" ISSUE

The Purchaser's Guide to Greater Value



Checking Coast to Coast for Your Steel Requirements

Business executives and buyers, faced with the problem of getting steel from stock under today's spotty supply situation, are finding Ryerson a helpful source.

True, our stocks are still unbalanced from a size standpoint—a condition which, we believe, prevails throughout the industry. But the Ryerson plant near you does have a fairly good tonnage on hand and it does offer you a special service that's often helpful.

As part of the world's largest steel distributing organization, your local plant can call on the resources of fourteen other Ryerson plants, each an independent operating unit but all interconnected and ready to cooperate.

Thus, if the steel you must have, or a practical alternate for it, is not on hand locally, there is still the chance that your requirement may be met from the stocks of

another Ryerson plant. We are always glad to check them all when necessary. And remember—Ryerson has always been notable for prompt, reliable delivery. When we have the steel, we get it to you quickly.

So multiply your steel buying efforts and make one call do the work of many. Contact your nearby Ryerson plant for all your steel needs. Our ability to help may surprise you.

PRINCIPAL PRODUCTS IN STOCK

CARBON STEEL BARS—Hot rolled and cold finished

STRUCTURALS—Channels, angles, beams, etc.

PLATES—Many types including Inland 4-Way Safety Plate

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REINFORCING STEEL—Bars and accessories, wire mesh, etc.

BABBITT METAL—Lead base, five types

RYERTEX—Plastic bearing material

MACHINERY & TOOLS—For metal fabrication

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Cooperate for PROFIT

By A. W. Soell

A. W. ("AL") SOELL is General Purchasing Agent of Gaylord Container Corporation, St. Louis, and is currently serving on the Executive Committee of the National Association of Purchasing Agents as Vice President for District 3. In the latter capacity he represents, in national councils, the Central Iowa, Chicago, Denver, Kansas City, Milwaukee, Rock River Valley, St. Louis, Tri-City, Twin City, and Twin Ports Associations.

Mr. Soell is a native St. Louisian, and received his education in the public schools of that city and at Washington University, where he completed a course in Commerce and Finance.

His business background is on the accounting side. He worked for several years with a public accounting firm, and joined the Gaylord organization in 1930 in the accounting department. For five years, 1933-1938, he was stationed at Atlanta as office manager of the company's plant there, and as assistant to the General Manager. After this experience, he was brought into the headquarters offices of the Corporation at St. Louis, as an assistant in the President's office, working on a number of special assignments, including the installation of a complete budget system for all Gaylord offices and plants. He came into purchasing work as Assistant General Purchasing Agent in 1940, and three years later succeeded to the position he now holds.

He has been a member of the Purchasing Agents Association of St. Louis since 1940, and vitally interested in all of its activities. In addition to his work on many important committees and service in its various offices, he edited the Association Bulletin for a number of years, was General Chairman of the very successful district conference held at St. Louis in 1950, and is currently chairman of the Purchasing Advisory Committee. He was elected to national office at the Atlantic City convention of N.A.P.A. last May.

He has served on the Board of Directors of the St. Louis Better Business Bureau, and is a member of the Webster Groves Presbyterian Church. For recreation, his preference is for outdoor sports, with hunting, fishing, and golf high on the list. He is a member of the Westborough Country Club and the Missouri Athletic Club. The Soells make their home in suburban Kirkwood, Missouri. They have one son, now in his senior year at Webster High School.

NO matter what our function in business, whether it be in purchasing or sales or manufacturing, what does management expect of us? It expects us, as a part of the management team, to be primarily interested in one thing—doing our jobs as efficiently as possible, so as to better serve our customers, remain competitive, and yet make a legitimate profit for our companies.

Never before in history have we experienced such rapid developments in our economy, resulting in opportunities—if we will but recognize them—to be of vital influence in the profitable management of our companies. With the vast plant expansion during the past decade, which has increased competition in almost every field, both the buyer and the seller have been faced with a real challenge, and the realization has come that a closer relationship has to be maintained.

How can we, as Purchasing Agents, keep up with this accelerated pace? Heading my list of answers to this question would be: through our supplier relations. This matter of supplier relations is not just a theory with me. I have seen it work to advantage on both sides

of the fence—through its application in my own function of purchasing, and through the sales division and the customers of my company.

We in Purchasing have the responsibility of assuring our company a steady flow of raw materials and supplies of the highest quality at the lowest ultimate cost. This ultimate cost must stay within the limitation of the competitive situation in the particular field in which our company is doing business. However, normally there is a certain leeway within these limits, and in the application of this leeway, good judgment plays an important role. To my mind, judgment is the one quality that makes the Purchasing Agent an executive in fact and in the eyes of his management.

A large share of the National Association's efforts in placing the purchasing profession in the position of prominence it enjoys today, have been designed to erase the misconception that the Purchasing Agent is an individual who tries always to buy at the lowest price. There has never been much comfort in that outmoded philosophy, because you never can be sure that there isn't a lower price lurking just around the corner.

The perfect formula is to combine the search for savings with the realization that there are many intangibles and hidden values that must be considered, and paid for. These hidden values include many things that do not appear in the specifications of an article, or in the writing of a contract—such things as extra service, extra quality, advantages of a supplier's research division, and the sincere desire of a supplier to put all of these extra values to work for you.

A masterful presentation of prudent, value-conscious buying has been given to our profession in the 80-page N.A.P.A. booklet, "Cutting Costs by Analyzing Values". It has been heartening to witness the enthusiastic reception given this N.A.P.A. effort in local associations all over the country. There are numerous examples cited in this book, all dealing with better value through the utilization of sound purchasing techniques, through better suppliers, through better design revaluation and modification, through better manufacturing methods, through standardization, through substitution of materials, etc.

Every Purchasing Agent who has studied these principles is already using good judgment. But, more important still, he must also use equal-

ly good judgment in applying these principles, particularly in his supplier relations.

He should realize that a business transaction must be profitable to both parties, and that a little extra investment in cost is sometimes necessary to completely attain his objectives. If a Purchasing Agent succeeds in squeezing out the last drop of profit from a supplier he has no right to expect continued interest and cooperation from that source.

Suppose you were a sales manager. You would not be enthusiastic about a salesman who did nothing more than gather in opportunities for your company to be the low bidder. Such a man could be replaced by a messenger boy. The good salesman is familiar, in his own field of operation, with the latest developments and money-saving ideas. He realizes that the Purchasing Agent is constantly on the lookout for new products, new processes, and new ideas that will save his company

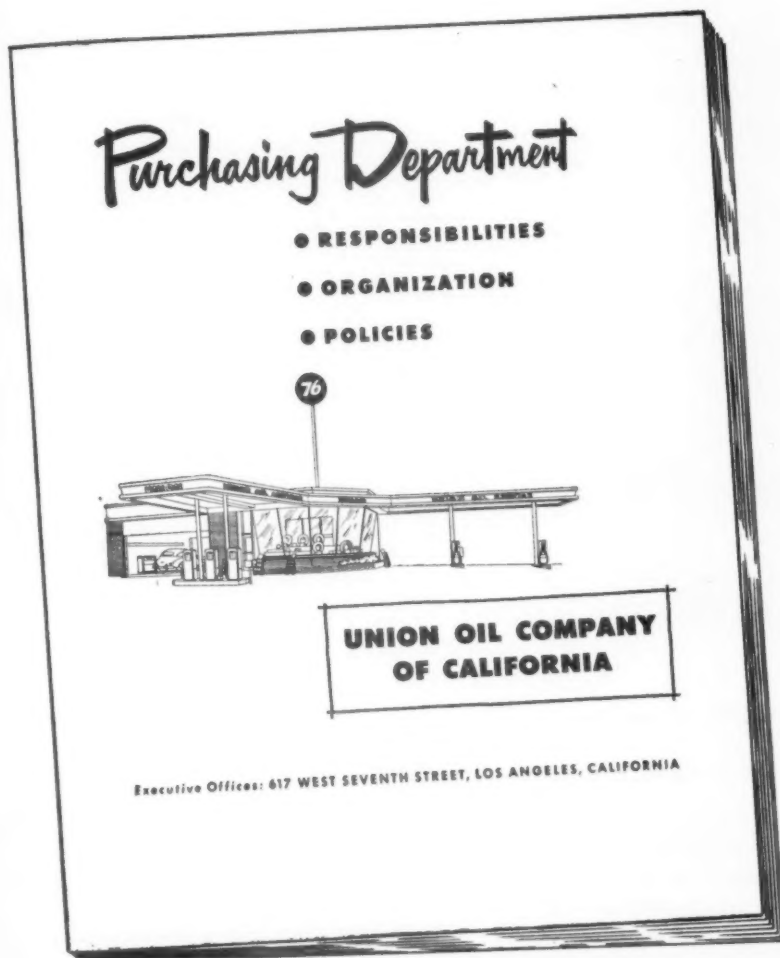
money. I believe that most salesmen are on their toes and do follow this principle, provided they are given the opportunity by purchasing departments. I know of many who have helped me, and my company, through their own initiative and efforts. We must remember that when a salesman has new ideas, or new money-saving products, he will certainly take them first to the Purchasing Agent who gives him the cooperation to which he feels he is entitled, and who will net him a fair return for his selling efforts.

What does this all add up to? The Purchasing Agent should use good judgment and make the salesman feel that he is open-minded and receptive. The salesman, on his part, should make his calls productive by bringing information and ideas that will be specifically useful to the company on whom he is calling. Through this mutual approach, purchasing and sales can cooperate for profit.



"You and your hearty handshake! It might interest you to know this is the hand I sign orders with."

Company buying policies are put on record in this



Purchasing Policy Manual

... Buyers, users, and vendors have a clear-cut guide to the principles observed in purchasing for the Union Oil Company of California

THE first and basic policy to be observed for making any code of administrative and operating policies effective is to be sure that those policies are clearly and officially stated and are made known to all persons concerned. Obviously there is no basis for compliance unless the guiding principles are known and understood, and the time for such information and explanation is before the possibility of misunderstanding and violation or argument arises.

The Purchasing Department of Union Oil Company of California has recently prepared and issued a policy manual that effectively deals with this problem. It provides a clear and detailed statement of the organization, responsibilities (and limitations), policies and standards of the department. It has the endorsement of the company's Executive Committee to establish this statement and code as a part of official company policy. And it is

distributed so as to reach all three of the groups affected by these policies and regulations:

"... To serve as a guide for *Purchasing Department* personnel in their relations with suppliers and with other departments of this company.

"... To inform *employees of other departments* who are responsible for contracting and purchasing, of our basic purchasing policies.

"... To inform *our suppliers* of the policies guiding our actions so that our mutual interests may be served better."

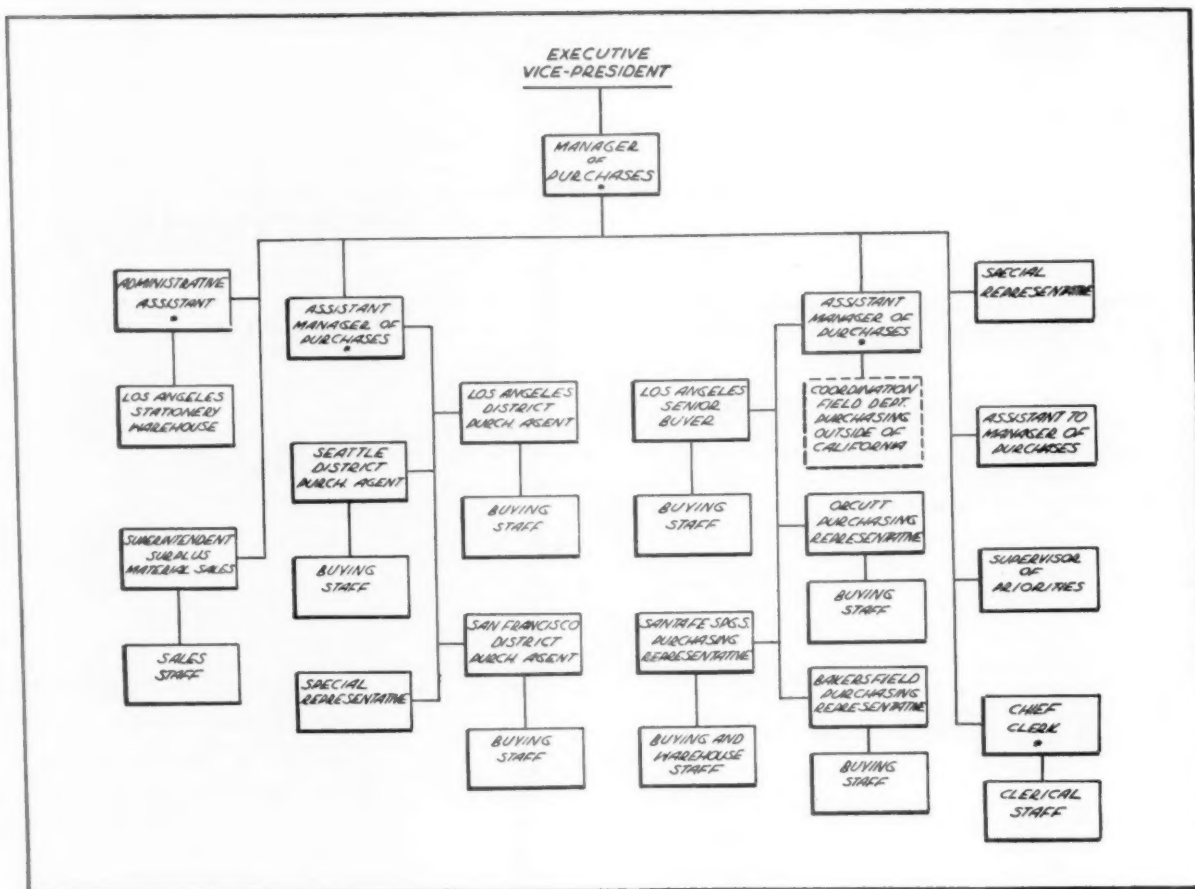
The manual consists of four sections. The first section sets forth the department's organization, which, due to the character of the company operation and the wide geographical area covered, is partially centralized and partially decentralized. For graphic clarity, this is illustrated by an organization chart, shown herewith.

The department functions through

the Manager of Purchases, who reports to the Executive Vice President of the company. He is responsible for the over-all conduct of the department and the general supervision of all purchasing functions throughout the entire scope of company operations.

Assisting the Manager of Purchases at company headquarters in Los Angeles are two Assistant Managers of Purchases and a head office staff. This group is responsible for contracts, general policies, standardization, surplus material sales, priorities, foreign operations, and invoice auditing.

Actual purchasing is done through District Purchasing offices at Los Angeles, San Francisco, and Seattle. The District Purchasing Agents at these points report to one Assistant Manager. The other Assistant Manager directs a purchasing representative at Santa Fe Springs, where buying is done for production and pipe line operations, and at Orcutt



and Bakersfield, where field operations are carried on.

The manual then goes on to state the scope of purchasing responsibilities and the governing policies, as follows:

Responsibilities

The responsibilities of the Purchasing Department are:

To purchase material and secure services for the company's use in such a manner that the maximum value will be obtained per company dollar expended.

To explore the markets for new sources, products, materials, processes and ideas.

To expedite the delivery of material to meet the requirements of the using departments. The buyer's responsibility with respect to an order that he has placed does not end until delivery has been effected.

To handle complaints from the requisitioning department concerning purchased material, and to negotiate the return of the material or other settlement.

To dispose of to the best advantage all material which has been declared surplus or obsolete by responsible authority.

To supervise company inventories, and, where necessary, to safeguard such materials until the time of use.

To receive and audit invoices for payment.

To assist in the standardizing of materials, supplies and equipment.

To maintain a stationery warehouse for the storage and shipment of stationery supplies.

To obtain priority assistance from the appropriate governmental agencies during periods of governmental control of materials.

To maintain a contract manual for the guidance of the Purchasing Department and other contracting departments.

To review contracts issued by the other departments in order to maintain a uniform contract policy.

The Purchasing Department is not responsible for:

The purchase of crude oil, advertising, and insurance.

The selection of over-the-road automotive equipment.

The contracting of drilling.

The operation of warehouses, except the Los Angeles Stationery Warehouse.

The performance of traffic functions such as routing, tracing shipments, and filing claims with carriers.

The Purchasing Department has an obligation to our Company to obtain the maximum value for the money it expends. To meet this ob-

ligation, materials or equipment will be purchased which perform their required function at the least cost to the Company over the period of their life. This does not mean that we always buy the cheapest material or equipment. Although price is an important consideration, it is only one of the components of value. We consider quality and service in addition to price in our efforts to obtain maximum value for the Company.

We are in a competitive industry. It is necessary for us to buy efficiently to help maintain our competitive position in that industry. We are constantly striving to find suppliers that have capable management and efficient equipment. We survey the markets regularly to find substitute materials that will result in cost savings. We frequently combine our requirements to make quantity price savings.

Efficient purchasing demands also that we buy the right quality for the particular requirement. The purchase of material which is either higher or lower in quality than is actually required is wasteful.

Price and quality are of little importance if the material is not delivered when it is required. Therefore, we purchase only from companies that are stable and have a

good reputation for service. Whenever possible, we prefer to buy from sources close to the point of use.

Relations with other departments. Except as previously noted, the responsibility for conducting and concluding negotiations affecting purchases, price, deliveries, and terms, rests with the Purchasing Department. In discharging this responsibility, however, it will be necessary to cooperate closely with other departments. For example the Research Department sets up standard specifications for various commodities, but such specifications must take into consideration price and availability, and be developed through Purchasing Department cooperation. The Engineering Department will design units and new equipment, and here also price and availability on pumps, motors, vessels and many other items should be developed in cooperation with the Purchasing Department. Routing of shipments, legal questions, taxes and insurance are subjects which require close cooperation with the departments concerned. The Purchasing Department will keep the using departments fully informed as to the availability of materials, possible price changes, and any new developments.

Contracts. Contracts covering our entire requirements of a commodity are often of value in securing dependable sources of supply and the lowest price based on our total requirements. Normally, such contracts should be for one year with the right of cancellation upon reasonable notice. In order to maintain competition, these contracts should allow us to buy elsewhere upon proper evidence of lower general market conditions, if it is possible to obtain such a clause in the contract.

Blanket orders and local purchase orders. We believe that a substantial reduction in the cost of procuring materials can be made through the use of a blanket order system and local purchase order. Blanket orders are issued to regular suppliers where the volume of business warrants their use. The local purchase order is used by operating personnel for securing material and services of minor value where the volume of business does not justify the use of blanket purchase orders. This form is used by all departments in emergencies where immediate local action is required. On blanket orders and local purchase orders, we run a calculated risk of error. However, from experience we have



The Purchasing Department of Union Oil Company of California greets business callers with an attractive, interesting and helpful little booklet entitled "A Welcoming Hand". It is a personalized greeting in that the receptionist writes in the visitor's name on the cover when he registers for his call.

The booklet opens with a cordial message from E. H. Weaver, Manager of Purchases.

The first page—"Whom to see"—lists buying personnel at the headquarters and district purchasing offices, with titles and major commodity assignments. A unique mechanical feature is that this page is separately printed on a gummed sheet and tipped into the booklet, so that the listings may be kept constantly accurate and up to date.

The page on "What we buy" mentions the wide variety of items—"anvils to zippers"—making up the \$60 million annual purchases of the company for its production, transportation, refining and marketing operations, and citing the major requirements such as pipe, fittings, valves, electrical products, chemicals, containers, etc.

"How we buy" outlines the divisional purchasing organization.

Another page is devoted to information on calling hours and the convenience facilities available to business callers.

The booklet also includes a brief history of the company, which started inauspiciously in the 1880s when the first seven wells drilled by its founders proved to be dry holes, but went on to bring in the greatest gusher of all time in 1910—Lake View No. 1, near Bakersfield. The company ranks today as the oldest and largest independent petroleum company on the Pacific Coast, and has an impressive list of "firsts" to its credit in petroleum industry development.

found the savings of time due to the elimination of purchase orders on small items far exceed the expense of correcting the few errors that occur. All local purchases orders are subject to review by the Purchasing Department for conformance to purchasing policy.

Quotations. We believe that securing written quotations is a sound method of obtaining competitive prices, and where the dollar value of the requirement is sufficient, bids will be obtained in that manner. All quotations received by this department will be confidential. Members of our department are instructed not to divulge competitive prices under any conditions.

Unless there is obvious evidence of a gross error, we expect all bidders to stand or fall on the basis of their first quotation to us. However, if any change is made in the specifications or other conditions after the submission of bids, all suppliers will be given the opportunity to submit revised quotations.

Relations with sources of supply. The Sales Department of our Company constantly strives to build good will for our Company and its products. We can assist it in building good will for the Company by the way we conduct ourselves in our contacts with our suppliers.

It must be recognized that vendor good will does not come packaged with his product, nor is it purchased by payment of his invoice. It must be cultivated by courtesy, honesty, and fairness on our part.

When a salesman calls at our office, we see him promptly. He will have a fair hearing of his sales arguments. If his company does not merit the business, we are forthright and inform him the reason. We do not play one supplier against another to obtain price advantage. In short, the salesman should receive the same treatment that we would want our own salesmen to receive.

Cash discounts. Invoices which allow cash discounts will receive preferential handling by us. The cash discount will not be taken unless earned.

We prefer to do business with firms that extend a cash discount to us. Our buyers will encourage the extension of cash discount terms from suppliers by pointing out the advantage to the seller. The cash discount may be the deciding factor in placing business if all other things are equal.

Return of material. The return of material ordered in excess of our actual requirements is subject to

negotiation by buyer and seller. In general, however, we believe that it is not unreasonable to expect full credit when standard material is returned within a reasonable period of time in the same condition it was received, particularly when purchased from a regular supplier.

Inventory policy. Our policy on inventories is to carry the minimum quantities of goods necessary to protect the continuity of our operations, consistent with good buying practice.

Speculative buying. We do not purchase speculatively. We may buy ahead against known market or price changes, but only after thorough consideration and concurrence by the Executive Committee. We seek to make our profit on the discovery, refining and sale of our products, and not by speculative buying.

Standardization. We recognize the many benefits of standardization to ourselves, our suppliers, and our customers. Consequently, we prefer to buy standardized products when possible.

Government regulations. Purchasing Department employees are charged with the responsibility of complying with all applicable governmental laws and regulations. We will not knowingly violate or attempt to evade any government statute.

Small claims. When the probable cost of settling a non-recurring claim is more than the amount of the claim, it is not taken up with the supplier.

Rush orders. A policy of the department is to reduce rush orders to an absolute minimum. Rush buying is uneconomical buying. There are times when rush orders are unavoidable, but constant checking is done to determine the reason for any rush orders which might occur. Through cooperation with the various using departments, we hope to eliminate all but the real emergency cases.

Acceptance of gifts. It is our policy to prohibit the acceptance by our employees of immoderate gifts or entertainment from our suppliers. Gifts or entertainments of more than nominal value are designed to influence judgment. This is not fair to our Company, which has a right to expect maximum value on its purchases, and to other suppliers, who have a right to expect a fair and even chance at our business.

Employees responsible for recommending or directing the procurement of materials, properties, or

services, must disclose any direct financial interest they may have in the purchase or sale of same. Employees shall be without authority to conclude any contract from which they personally benefit.

Plant visits. We encourage members of the Purchasing Department to visit the plants of our suppliers. Plant visits enable our employees to evaluate the ability of suppliers to meet our requirements and broaden their knowledge of the materials which they purchase.

Several sources. We believe that it is good purchasing policy to have several active suppliers for each commodity. This policy gives us better assurance of supply, maintains competition, and builds good will in a wider circle of industrial contacts.

Reciprocity. Reciprocity is the practice of giving preference to suppliers who are also our customers. When our customers offer us quality, service and price equal to the quality, service and price offered by non-customer suppliers, we prefer to do business with our customers. However, reciprocity will be considered only when all of these factors are equal. Our buying goal is maximum ultimate value, and we will not depart from the principles of good purchasing. Any serious questions regarding trade relations should be referred to the Manager of Purchases.

Product testing. We are interested in any new materials or equipment which will result in savings for our Company, and actively solicit information along these lines. We are willing to test new products if they offer a definite promise of saving. However, since tests are expensive, we cannot be a general proving ground for all products, and therefore restrict our tests to those products that appear most promising.

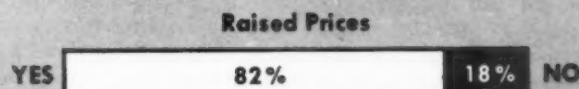
Personal purchases. The use of the Company's buying power for the benefit of employees will be restricted to the purchase of such materials as are commonly used by the Company in its business, and to such kindred materials as can be purchased from the Company's established list of vendors without impairing its relations with such vendors, or working to the Company's disadvantage in its efforts to sell its products.

The final page of the purchasing policy manual presents the code of "Principles and Standards of Purchasing Practice" advocated by the National Association of Purchasing Agents, with the endorsement: "We subscribe to these standards."

Has the EXCESS PROFITS TAX Hampered Economic Progress?

Tax relief, as soon as practicable and consistent with balancing of the national budget, is included in the fiscal policies of the new administration. One tax relief proposal—that for removing the excess profits tax—has economic implications beyond the factor of national income alone. The original purposes of the tax, the national and world conditions under which it was imposed, and its practical effects have to be carefully considered. The collected opinions of a representative group of purchasing agents on key phases of this subject appear below.

① In your opinion, has the excess profits tax been effective in combating inflation, or has it raised prices to compensate for this added drain on revenue ?



② Do you believe that the excess profits tax has been effective in curbing profiteering by unscrupulous operators in the defense economy ?



③ Is it your belief that the excess profits tax has destroyed the incentive to expand and modernize, thus curtailing potential supply ?



④ From your observation, has the excess profits tax encouraged carelessness, waste, and extravagance in business operations ?

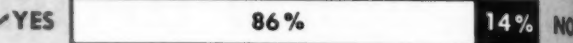


⑤ Do you expect that removal of the excess profits tax will: ?

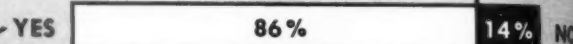
Encourage expansion and modernization



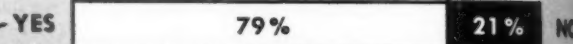
Increase industrial efficiency



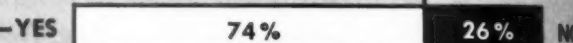
Stimulate competition



Increase output



Reduce prices



⑥ In your opinion, is the implication of "excess" profits a proper basis for taxation policies in peacetime ?



WHAT THEY SAY

"IGHAT" (Ed. note: Presumably a reference to the Midwestern group which has as its motto, "I'm Gonna Holler About Taxes.")
"Punitive taxation."

"Believe the present tax should be continued until the budget is more nearly balanced."

"There should be some standby controls to tax the unscrupulous operators who are out to make a fast dollar."

"The terminology 'excess profits tax' is entirely misleading. Business should have made the public aware of the facts. By using this terminology the administration was able to make the tax popular with the people, whereas if the people had had all the facts, the tax would have been as unpopular as most taxes are."

"The unfair and discriminatory implications of the excess profits tax will plague our economy for a long time after the tax itself is killed. The carelessness, waste and extravagance promoted by the tax will be very difficult to erase."

"The curtailing or elimination of excess profits tax will definitely encourage expansion and modernization."

"Unless new companies and/or expanding companies are permitted to retain a larger percentage of their profit before taxes, these companies will be unable to sustain any reduction in business volume."

"Excess profits taxes penalize a young growing enterprise at the precise time they should have these excess profits to put back into the business to finance its growth. It is a penalty on growth."

"Excess profits tax hurts the small business most."

"Excess profits taxes should be applied to swollen profits which

have been increased to abnormal levels directly because of conditions of war, but—carefully avoiding penalty to profits swollen through new enterprise or through initiative."

"Competition or supply and demand without excess profits taxes will establish a fair operating profit level."

"In favor of removal of the excess profits tax as soon as possible consistent with the fiscal policies of the new administration."

"Relief from excess profits taxes will permit more funds to flow into channels of advertising, research and development, expansion and improvement of facilities to make more jobs and reduce costs. The profit margin is growing dangerously narrow and it's difficult to see how prices can be reduced with labor, overhead and tax burden at present high levels."

"With the expansion in our population and economy, setting up any previous base period as a limiting measurement of adequate earnings is definitely a false premise. Expanded industry requires more working and investment capital which excessive (and this is what the excess profits tax is) taxes deny it. Excessive taxation, regardless of the excuse, is a step in the socialization of industry and the death of free enterprise."

"The excess profits tax has been a prime cause of inflation and is indirectly responsible for the lack of resistance to the upward wage spiral."

"All it has done is to put a premium on 'sloppy management' and cause a lot of people in money-spending positions to talk about 18-cent dollars."

"Excess profits have placed a premium on the purchase price of bankrupt companies. Since when is a loss an asset?"

Controlled Purchasing from Bill of Materials

By Fred M. Burt

IT IS no longer unique to find women in positions of major purchasing responsibility in manufacturing industry, and doing a very competent job. However, the position at Magna Electronics Company, Los Angeles, is quite unusual in that the purchasing responsibility is combined with materials control for 15 production departments, closely coordinated with production control, plus product design and the direction of the company's advertising program. Miss Jan Risa, the young lady who sits in the middle of this variety of activities, handles this multiple responsibility with poise, skill, and efficiency. She keeps always on top of the job and runs it with authority, rather than letting the job run her.

The continuing purchase requirements handled by Miss Risa, and the changing problems she has to solve from day to day, parallel those found in many another relatively small manufacturing business. In this case, they also involve considerable anticipative imagination, because of the variety of products made and the constant expansion of production schedules. This obviously calls for a well conceived plan and system for purchasing, storing, and supplying production—a plan and system that are reliably effective in dealing with present requirements, and are at the same time flexible and looking toward the future. The system at Magna is designed to be applicable with equal effectiveness when dollar volume is doubled—a condition that must be faced in the near, foreseeable future of this growing concern.

Magna's plant production is di-

vided into two categories: for special orders, and for stock as based on sales anticipation. A Master Bill of Materials is kept in the purchasing office, containing an indexed record of everything that is manufactured in the plant, each product being broken down into a complete listing of materials, parts, and other supply components going into the product. These records are kept in a large binder on standard forms, 9¼ x 17"; they are also used in guiding the flow of supplies from materials control, through the stockroom, to production and assembly.

On this master record, along with other pertinent detail, is a listing of supply sources and standard costs.

These costs are revised by Miss Risa at the end of each fiscal year, based on the previous year's experience and latest current quotations, and then, with final approval by A. E. Duhammell, President and General Manager, are used in costing for the subsequent year.

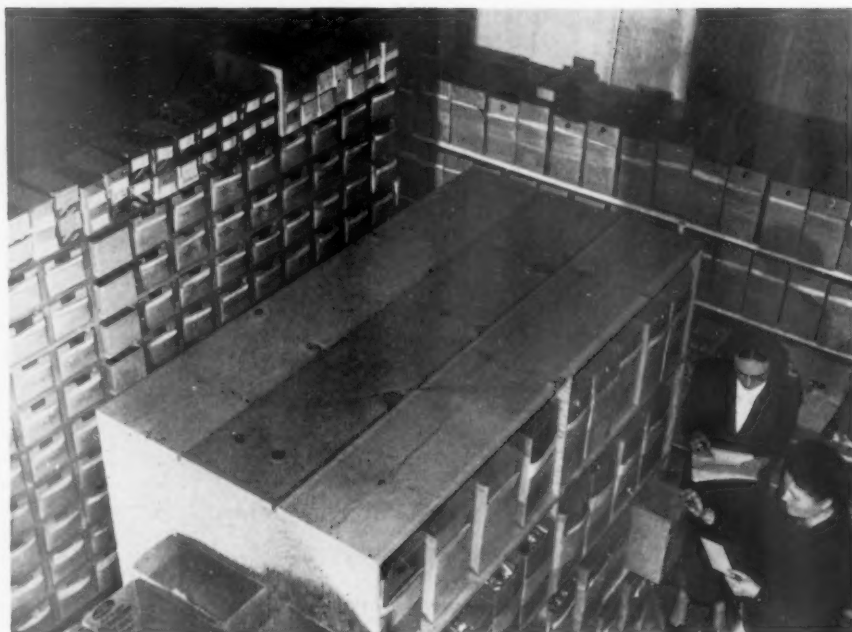
The master record also shows the bin number or other location identification for every stocked unit or item. (A new and enlarged stockroom facility is now in course of development.)

A simple, effective index numbering system for all materials and parts is based on ten major categories. The first two digits of the index number denote the category,

MISS JAN RISA (right), Director of Purchases and Material Control for Magna Electronics Company, came into industrial purchasing work by an unusual route. Formerly a department store buyer in Michigan, she forsook buying to open a design studio in Los Angeles. One of her early clients, in 1945, was the newly established Magna organization. Apparently her product designs were good, for the young company rapidly grew to the point where, within a year, the need was felt for a centralized purchasing department, and Miss Risa was invited to take over this responsibility. Her position is probably unique in that she continues to design the company's products (except for engineering design), buys the materials for their manufacture, and supervises the advertising program which helps to sell them.

Magna produces about 35% of the electronic guitars and amplifiers sold in this country, besides a diversified line of radios, phonographs, intercom and public address systems, and many other types of electronic equipment. Purchases total close to a half million dollars annually, and are expanding. The company is currently engaged in doubling its production area to keep pace with the growing business.





The present stockroom makes use of strong, easily handled cardboard boxes of uniform size for the multiplicity of small parts required. This method of storing and identification will make it easy to transfer supplies to the new, commodious stockroom now under construction. Stock is checked against bill of materials for production orders, and stock allocation is noted on the "bins".

followed by the identification number applicable to the item listed. Thus, every item can be quickly and easily identified and checked, both in the records and in physical stock. The major classifications are as follows:

Index
Number

- 10— Wood
- 20— Ferrous and Non-Ferrous Metals, including Tool Steels
- 30— Other Raw Materials, in-

cluding Paper, Fiberglas, and Plastics

- 40— Finishing Materials, Organic, Plastic Coatings, Plating
- 50— Cabinet Hardware, Hinges, Handles, etc.
- 60— Mechanical Components; Purchased Parts
 - a. Fabricated Metal
 - b. Fabricated Wood
 - c. Fabricated Plastic
 - d. Miscellaneous
- 70— Working Parts

One of the final assembly benches for amplifiers. Assembly operations are located close to stock areas to minimize factory traffic.



- 80— Decals, Nameplates, etc.
- 90— Hardware, Fastenings
- 100— Miscellaneous Supplies

Three other indexed material description books, without prices, are kept in the production office, stockroom, and in engineering. These are brought to the purchasing office each week for correction as to new or obsolete parts numbers. If Engineering makes any change in a bill of materials, it is noted on a "Change Notice" and sent to Purchasing that the change may be made in the master record. A "Substitute Material" slip is sent from Purchasing to Engineering, generally accompanying a sample of the material, to obtain an approval before the purchase is made.

For every item used in production, there is a 4 x 6" Kardex form, kept up to date in a purchasing office file, carrying a complete history of procurements and disbursement. A similar card is located on bins or containers in the stockroom, as a record of receipts and disbursements (without any of the purchasing information) and current stock balances in perpetual inventory form. The color of these cards is changed at the first of each year, and the new card is attached to the old one. At the end of the year, when a new color card comes into use, the oldest card is removed to a storage file for possible future reference, and is destroyed after two years.

A record of purchases of non-production supplies is kept in a ledger consisting of letter-size sheets in a post binder, filed alphabetically by vendors' names, a separate sheet for each vendor.

Typical Procedure

To show how purchasing, materials control, and production control are coordinated for efficient functioning, let's trace the full operational flow in respect to an order for a new model.

Upon completion and approval of design for a new product or model, the complete parts and material list is made up in Engineering and sent to Purchasing, where it is transcribed to the master bill of materials, using the proper terminology for each item. The items are priced as promptly as possible.

Next, assume that it is decided to manufacture 100 of these units to fill orders, received or anticipated. This is written up on the Production Schedule Order form, with copies going to Purchasing and Production. Actual production decisions will involve a meeting of the Planning Committee, a variable group consisting of those most vitally interested,

[illegible]

The Production Report records are maintained cumulatively in the Purchasing office, from information taken from the operation record and time cards of production employees after they have passed through the

PRODUCTION SCHEDULE FOLLOW-UP

Date: _____

By:

[illegible]

Production orders are not scheduled until materials are available for the job. A stockroom check indicates shortages that must be purchased, and definite quantities are allocated for specific orders, from balances on hand.

[illegible]

DATE	SOURCE	PURCHASE ORDER	QUANTITY ORDERED	PRICE	UNIT	RECEIVED	BALANCE ON ORDER	REQUIRED	ON HAND
Feb 1	Inventory								
July 1	R. C. A.	66114	300						
July 10	R. C. A.	66114							
Aug 10	R. C. A.	66114	200	295	EA	300	300		
Sept 9	R. C. A.	66114		295	EA	200	200		

offices of the Plant Superintendent and Controller. These Production Reports are filed chronologically by schedule numbers, and are brought up to date weekly.

Analysis of these production records enables Miss Risa to summarize the actual consumption of items taken from inventory as compared with the consumption scheduled. This careful checking and meticulous attention to detail is part of the policy of purchasing only those things for which there will be a specific, profitable use, and following through to see that they are used for the intended purpose and that nothing is wasted or falls by the wayside. A part of this policy also consists of leading all of the personnel who have anything to do with handling or use of materials to consider each part, whether it cost 25¢ or \$20, as being worthy of the same respect as so much cash—a quarter or a \$20 bill. This attitude has become well established.

Minimum stocks of standard items range from one to six months of normal supply requirements, depending on price break advantages and quickness of delivery.

The purchase order form is made out in four copies:

1. Vendor's copy.
2. Purchasing Department copy.
3. Material Control copy, used in receiving materials and reporting receipts to Purchasing.
4. Acknowledgment copy. This includes space for delivery promises and instructions on delivery schedules when the order calls for more than one shipment over the period listed.

Purchase Orders

About 65 to 70 purchase orders are issued weekly. Purchase order copies are placed in an alphabetical, expandable desk file, by vendor's name, and are posted daily to the Kardex record. They are retained in this file until the order has been filled and the invoice and receiving slip have been received. They are then matched up with these documents for further processing for payment, and transferred to a storage file. The receiving or packing slips and invoices are handled in a similar file, also alphabetical by vendor's name. A rubber stamp

form is stamped on each invoice for the various entries to show that all necessary postings and other action have been completed.

Miss Risa signs all purchase orders and approves for payment, besides coding them for proper charging against various production or other uses.

With the simple system in effect, as outlined, clerical assistance is limited to one secretary, who also writes up the purchase orders and does the posting to purchasing department records. In the stockroom, one person handles the material control orders to feed parts and materials to production and assembly departments.

Close contact is maintained with all departments by means of a two-way Magna intercom system, with 10 plant stations. There is also a telephone intercom with five shop outlets, and a loudspeaker system with microphones at the receptionist's desk and in the production office, and a hook-up to the engineering department. In addition to its use for paging, etc., the latter system provides music for employees from tape recordings and FM radio.

When you buy "outside" machine time . . .

Dealing With Job Machine Shops



Back yard machine shops gave a big lift to war production, but they also helped to increase the aspirin consumption among purchasing agents.

By C. F. Carpenter

THE AUTHOR, recently retired from active business, spent many years as Purchasing Agent for the Stapling Machines Company, Rockaway, N. J. In that capacity he had occasion to "farm out" many machining operations and to contract for parts production to supplement his own company's plant capacity. From his long experience in dealing with a problem that is common to many purchasing departments, he discusses in this article the factors to be considered in appraising potential subcontractors in this field, the pitfalls to be avoided, and the methods that have proved most successful in getting satisfactory results.

FOR more than twenty-five years our company has bought machining time from outside shops, both large and small. When we began we didn't know very much about the process, its advantages and its pitfalls. However, we learned as time went on, and our education has been shot through with a variety of experiences, some disastrous, some wholly satisfactory, and some almost hilariously funny.

We developed this program of subcontracting because of the limitations of our own plant and equipment. Our business is the manufacture and assembly of semi-automatic machinery for producing wirebound boxes and crates. These machines are licensed, under our patents, for use in commercial box shops all over the continental United States and in some foreign countries. A typical machine will have approximately 1,500 parts. In making these parts we utilize cold finished and hot rolled steel, tool and alloy steels of different analyses, gray iron and alloy gray iron castings, carbon and alloy steel castings, malleable iron castings, aluminum in the form of bar stock and castings, bronze and magnesium castings, open hammer and drop forgings, and a lesser amount of steel structural shapes and plates.

Since we supply replacement parts for machines still in service but no longer classed as standard, it results in our making and carrying in stock some twelve thousand or more different parts with attendant inventory problems.

Our present plant employs a shop force of about 200, working two

eight-hour shifts, and it has seemed best, when pressed for more production, to buy the necessary machine hours from outside shops. There are some classes of work, such as planning of heavy side frames, gear cutting, cam cutting and sheet metal work (the latter confined chiefly to machine guards), for which we do not have the needed equipment as it would be used only intermittently. This work we buy, with no great difficulty, from concerns that specialize in these products and which have served us for many years.

Our primary aim, so far as possible, is to do all other types of machine work in our own shop in order to retain the obvious advantages of controlling production, quality, delivery, inspection, etc. In addition, a considerable percentage of parts are heat-treated in our own well equipped hardening department, and we retain all work of this kind except in a few instances where parts are too large for our furnaces.

Quite frequently, however, we reach the point where the man-hours represented by the work-load for conventional operations such as milling, lathe work, drilling, and

grinding, exceed our capacity, so in order to meet scheduled deliveries we buy machine time from job shops. And there the fun begins.

Background of the Job Shop

During the last war a good many articles appeared in magazines and Sunday supplements which told in glowing terms how tiny basement shops with two or three operators turned out volumes of high-class work for the war effort although lacking any real background of experience. And it's true—some did. In these articles there was almost invariably a picture of a machine operator at his "lathe" (the only machine tool known, apparently, to the writing fraternity), although closer inspection frequently showed it to be a milling machine or a shaper.

The "sub" celebrated in these write-ups usually had a government inspector standing at his shoulder, and operational inspections minimized the rejects. So he got by fairly well. But the war came to an end and, finding himself out of a job, the "sub" had to look elsewhere to keep his little organization employed. So eventually, perhaps, he came to sit in our visitor's chair, because news gets around in the trade and he had heard that we had lots of work "to give out." That was frequently true, and if small shops can do our work as it must be done, we prefer them to the large organizations where the personal contact is either limited or lacking.

A quick survey of the small job shop proprietor's background usually revealed that he had been a first-class machinist or tool-maker with a natural ambition for higher and better things that prompted him to start in business for himself. So he rented an old garage, bought a second-hand engine lathe, a small miller, a two-spindle drill-press and a grinder of sorts, and he was in business. Now if his equipment was reasonably good and if he operated it himself, the quality of the finished work would probably be satisfactory.

But it doesn't come out just that way. Our excellent machinist is now a proprietor with all the worries and responsibilities that go with his new status. He must now rustle new business for the infant organization, pick up material and deliver finished work, keep the books, send out the bills, and repair the shop machines. Naturally, he hasn't much time, if any, for production work, so he hires whoever he can get and, with only nominal supervision, the business proceeds.

Occasionally the background varied. One day, during the war, when all kinds of job work were plentiful, I had a call from a rather prepossessing young man who said he was anxious to do some of our work. He thought, he said, that he could help us out. Of course, I asked him what facilities he had to offer and he told me, without embarrassment, that he was driver on a milk route and totally without shop experience. But he had a good friend, he said, who was a machinist employed by a large outfit, and if we would guarantee them a thousand dollars' worth of work each month, he was prepared to quit the milk business, buy some shop machines on time payments, and, with his friend, go into the job machining business.

Good Shops Can Be Found

Looking at the other side of the coin, we have been fairly successful in finding small shops employing anywhere from five to twenty men that can take our short run lots calling for diversified operations, and, after a little experience, are able to produce parts to the dimensions, limits and finishes we must have. The parts have usually been made repeatedly in our own shop, so the sequence of operations has been worked out. With the detailed print we always give the prospective supplier a copy of our operation sheet telling him that this is how we do it *with our equipment* and in the light of our experience. We invariably add that since tools and methods vary, the supplier should follow our operation sheet only if he finds it useful under his own shop conditions. Also, that we want—and fully expect—the result shown on the drawing. He may arrive at this end by any means he selects.

Usually we do not ask for competitive bids. We know from our own records how much time is normal for each operation, and the effect, cost-wise, of set-up time on small lots. This enables us to spot unbalanced bids, after allowing for possible differences between our equipment and the less modern tools in the supplier's shop, plus the factor of our background experience in making the part.

Further, competitive prices on small-lot machine work frequently exhibit such amazing extremes that comparisons are of little value. A very low bid may indicate only that the bidder knows little about estimating. If he takes the job at his figure he is doomed to "lose his shirt", and we are not interested in

helping him to do so. If the bid is unreasonably high, it may mean only that with out-dated equipment and inexperienced help the supplier cannot come within hailing distance of our standard times.

We have never believed that it is good procedure to tell the supplier what price we will pay for machining any given part. His operating conditions are different from ours, and he knows, or should know, better than anyone else, the price at which he can afford to sell his facilities. If he doesn't know, we would prefer not to employ him, for the rest of his operations will be just as casual.

Applying the Tests

For our requirements, the best way we know is to decide first whether the shop in question has enough equipment of the proper kind and enough operators with the necessary experience to do the job. These points can be determined by a visit.

If the shop looks promising, we then furnish detailed drawings and specifications and state precisely what material is to be used. If it is ordinary cold finished or hot rolled steel, the contractor is usually required to provide it. But castings, forgings and special steels are supplied by us on memorandum charge. We also loan any jigs, fixtures and special tools or gages we have made for the part.

With these points established, the supplier is in position to make a piece price. If we can afford to pay it, and if satisfied that he is able and responsible, he gets the business.

Where Trouble Can Arise

Delivery of the finished product within the agreed time is one of the chief hazards in buying machine work. Drop into any small job shop and ask the boss how much work he has ahead in machine hours. You will probably discover that he knows pretty thoroughly what concerns he is working for and how much money is involved. But ask him, for example, when his millers will be open for a new job, and it is nine chances out of ten that his answer will be nothing more than an educated guess, highlighted by his wish for the additional work.

The last and perhaps greatest hazard in buying work from small job shops is the final inspection. It is the chief reason why purchasing agents grow old before their time. Let me explain.

Our own shop is well organized

and directed, and our machinists, tool-makers and heat-treaters are well trained. In spite of these favoring conditions we make mistakes and spoil work, and always will as long as production depends on men and not on robots. But—and it's a big one—we have an inspection force working full time and with only one responsibility, namely, to compare the finished piece with the drawing and determine whether all dimensions and tolerances have been met. Having made this determination, the inspector is through. He is a fact-finder and nothing else. No one, not even the Chief Inspector, has authority to say: "Oh, that's close enough." That discretion belongs solely to the Production Manager, and his decision is final. Thus we keep our own mistakes in the family and the rework and salvage departments take up where the inspector left off.

But what happens in the small shop? Frequently the harassed proprietor is the only inspector and tries to crowd it in among numerous other urgent duties. More often the last operator is the inspector, and if some error shows up his attitude is too apt to be: "Send it along any-

way, and if they don't like it they'll let us know." So the parts are delivered, inspected—and rejected. The rejection notice, with detailed reasons, goes to the Purchasing Agent and the parts then belong to him. They are his, and it is up to him to start the weary round of having them returned to be corrected, replaced, or credited.

The easy answer, of course, is to put an inspector in the supplier's shop. But this wet-nursing plan is not always practicable. Furthermore, it puts the inspection burden in the wrong place. In our view, if a job shop proprietor, after a full preview of the requirements, cannot deliver correctly manufactured parts unless we take over an important part of his normal responsibility, he should not be in that kind of business.

Responsibility For Errors

When work goes back for correction or replacement, we enter another phase of the relationship. Let it be said that usually an honest effort is made to correct or replace work that does not conform to specifications, even if no great zeal accompanies the effort. We have to

bear in mind that nearly all small shops operate on limited resources and can ill afford the extra cost of correcting or replacing rejected work.

The natural question, of course, is why weren't the parts made right the first time, or the errors corrected before delivery? The question is fair enough, but we're discussing facts and discarding wishful thinking. So frequently we meet with alibis that would be laughable if they were not so completely exasperating.

I recall one job shop operator who machined a quantity of drive-rod heads. They were gray iron castings and each had a fairly deep $\frac{3}{4}$ "-10 tapped hole to receive the drive rod. Our inspection quickly showed, however, that the tap had been permitted to run out, consequently the tapped hole was oversized and the drive rod fitted so loosely that the assembly was useless.

Our supplier was a good Scotchman, and the prospect of loss was terrifying. He admitted that the pieces looked pretty bad, but took refuge in the statement that he had

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"Salesman's Interview Guide"

SALESMEN calling on the purchasing offices of The Pure Oil Company, Chicago, get a helping hand in the form of a reception booklet entitled "The Salesman's Interview Guide." It is predicated on the statement by General Purchasing Agent G. L. Parsons in a cordial foreword: "Remember, we are just as hopeful as you are that what you are selling is 'just what we are looking for'."

The booklet is bigger than most reception room folders, with full letter size pages, which makes for uncrowded type style and layout, easy and interesting to read. Among other information, it details the product assignments of the eight buyers in the department, with the name of the buyer in charge for each:

H. F. Bunnelle—Oil field production equipment, tubular goods, heat exchangers, production tools.

H. V. Melick—Mill supplies, packing, gaskets, building materials, welding and laboratory equipment.

C. F. Brehmer—Chemicals, fats, raw materials, paint, fire protective and safety equipment.

W. G. Lessmann—Advertising materials, printing, office supplies, equipment, and furniture.

L. J. Mehl—Automotive and radio supplies, rubber goods, electrical equipment.

J. R. MacArthur—Valves and fittings, space heaters, cooling towers, misc. refinery equipment.

E. V. Lauing—Lubrication equipment, compressors, containers, marketing items.

A. W. McInerney—Field erected tanks, castings, steel, pumps, refractory products, instruments.

In addition, there are "blueprints" of the office layout and of nearby parking spaces, a listing of the facilities for convenience of visitors, and reference to the Division purchasing offices in New York City, Tulsa, Fort Worth, and Houston, with names of the Divisional Purchasing Agents in charge. A brief summary introduction, covering



company policy as to "What's back of the Pure seal and slogan; who does our buying; what we buy; and what and to whom we sell" further helps the salesman to orient himself to the purchasing department and its needs.

Visiting hours for out-of-town salesmen are liberal; local sales representatives are requested to make their calls between 10 a.m. and 3 p.m., with a half day on Fridays.

Some New Finishing Methods

By Keenan Goodman, Purchasing Agent, Research Associates, Los Angeles, Cal.

ALTHOUGH adequate finishing materials and methods have been available to most industries for many years, opportunities for the alert purchasing agent to save money in the procurement of new coating facilities are today greater than ever before—and increasing with surprising rapidity.

An accurate evaluation of these opportunities must be based on a variety of considerations, least important of which in many cases is the question of initial cost. Finishing equipment that won't enable workers to get a job done with maximum speed and economy is a bad buy, regardless of its price. Yet it is never safe to assume that the most expensive equipment is bound to be best.

Steam Spraying

In plants with existent boiler equipment, for example, a very few inexpensive finishing accessories will make it possible to utilize the steam spraying process recently developed by du Pont to facilitate the application of synthetic enamels and other thermosetting coating materials. Steam pressure in such circumstances naturally costs less than equivalent pneumatic pressure, since it might otherwise be wasted; in addition, it may eliminate the need for new compressor equipment.

Coatings applied by steam pressure are not necessarily better than finishes applied with air pressure, since they require the same basic spraying techniques; but they will usually dry with greater speed due to the preliminary use of heat. There is, of course, some danger that careless workers will suffer burns where coatings are steam-sprayed, but this is not nearly as serious as the fire

hazard which normally exists in other types of spray operations.

Preheating

Incidentally, steam spraying should not be confused with other hot-spray techniques because it cannot be used to apply lacquers and other thermoplastic coatings (which have a tendency to "blush" if exposed to moisture prior to drying). Hot spraying generally involves the use of electrical accessories to preheat thermoplastics, prior to the application of the latter with pneumatic pressure.

Preheating serves the worthwhile purpose of increasing the fluidity of thermoplastic coating materials, thus saving the cost of substantial quantities of organic solvents or "thinners" in applying such materials; also, it tends to reduce drying time (since applied coating particles will

solidify soon after they are exposed to, and cooled by, open air).

Hot-spray accessories (now obtainable from Bede Products, Inc., Cleveland, and Douglas Wilson & Co., Inc., New York) can be used in connection with most conventional types of pneumatic spray equipment, and are very reasonably priced in view of the fact that they permit savings in production finishing which could not otherwise be attained.

Flame Spraying

The flame-spraying process, recently developed by American Agile Corporation of Cleveland, is probably the only organic finishing method that can be accomplished without solvents or thinners of any type. It involves the use of a special spray gun, with which dry thermoplastic powders can be ejected through an



Modern electrostatic finishing equipment is adaptable to many production set ups and reduces material losses. Worker (at right) does touch-up work without danger from the high voltage accessories in the same spray booth.

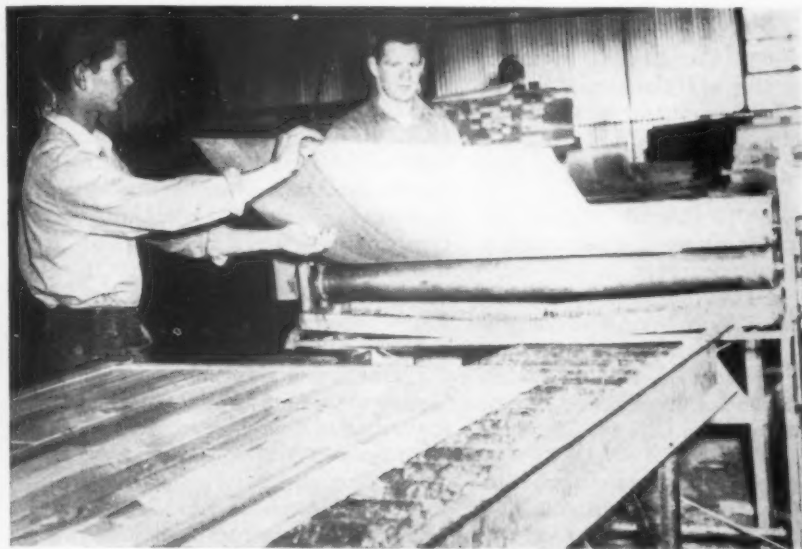
open gas flame. Purpose of the flame is to heat-soften the powders so that they will adhere to a deposition surface.

This process is more or less limited to the application of polyethylene coating materials, since other thermoplastics tend to oxidize too readily in the presence of open flames. However, it is extremely useful where it is necessary to build up heavy corrosion-resistant coatings on metallic surfaces in a short period of time (for example in lining tanks for the storage of acids and other corrosive chemicals).

Virtually all spraying facilities involving the use of heat can be used

not eventually acquire the subject equipment.

Therefore, it is interesting to note that a number of concerns are now producing electrostatic accessories for outright sales. One such unit (the Paint-Miser developed by Ash-dee Products, Inc., at Homewood, Ill.) is believed to represent a substantial technological improvement because it can be adapted to a variety of finishing setups for long or short production runs; also, because it has a full-wave rectifier (instead of the usual half-wave rectifier) to increase the uniformity of coverage and reduce coating losses due to overspray.



New low-cost roll-finishing equipment applies coating materials to one or both surfaces of sheet materials with exceptional speed and economy.

in conjunction with electrostatic finishing equipment, where it is desirable to apply numerous coatings to production items with fully automatic equipment. Electrostatic finishing is the process whereby the output of fixture-mounted spray guns is passed through a high-voltage electric field so that coating particles will be electromagnetically attracted to the surfaces of conveyor grounded products.

Electrostatic Processes

Many manufacturers have heretofore been unable to purchase electrostatic finishing facilities, because the latter were available only on a lease basis to users who were willing to sign a license agreement. Royalties called for by this agreement were not exorbitant, but they did represent a substantial investment for mass-production firms that could

With simple accessories of the type shown here, the normally wasted output of a boiler can be converted into steam pressure for the spraying of thermosetting coating materials.

Various types of roll-processing equipment have been available to large manufacturers for many years; but, prior to the recent development of a portable roll-finishing machine at L. R. Wallace & Co. of Los Angeles, such facilities were beyond the means of many factories. The Wallace machine has a price in the \$500 range; it can be used to apply glues, photosensitive emulsions, lubricants, etc., as well as organic coatings, to numerous types of sheet or plate materials (such as plywood panels or veneers, sheet-metal blanks, plate glass, fabrics, paper products, and laminated plastics). Coatings are applied to sheets or plates simply by passing them between a pair of neoprene-covered rolls, either of which may receive a uniform film of the coating material from an adjacent "doctor roll" so that one or two product surfaces may be finished in a single operation.

As yet, the much-publicized "rub coating" process—which involves the application of finishes with fabric materials—appears to be a very good thing for amateur painters, but not for commercial finishing operations.

Pressure-fed brushes, which are pneumatically supplied with paint like spray guns, have found many applications where coatings applied by other means must be touched up without overspray; but their companions, pressure-fed rollers, are still being used almost exclusively for the manual application of coatings to relatively large building surfaces.



What Constitutes Delivery . . .

. . . . Place? Title? Possession?

By Albert Woodruff Gray

PART of a Bucyrus shovel was in Maryland; the other part, a shovel front, was at Bath, New York. The owner sold the shovel for \$54,000, received payment in full, and contended it was the buyer's task, not his, to obtain possession of the equipment.

In reference to the shovel front, located in New York State at the time of the sale, the contract stipulated that the purchaser took it "as is and where is". The seller had also warned of the difficulties that might arise in taking this shovel front from the Fago Construction Company, in whose keeping it then was at Bath.

After arrangement had been made with a trucking company to transport the shovel front to Maryland, the buyer, at one o'clock in the morning, went to the neighborhood of the Fago Construction Company's office and located his shovel front about three hundred feet from that place. A few hours later he returned with the truck and driver to find the machine moved to within a few feet of the office of the contractor. The latter told him in emphatic terms that the shovel front belonged to him and that it stayed where it was until he saw fit to move it.

The seller, who had been paid the price of the machine, directed the buyer to call on his attorney for assistance in recovering possession of the shovel front and he would pay the legal expenses.

Instead, the purchaser sued to recover the value of the shovel front for which he had paid and which he contended had not been delivered to him. The seller in his defense maintained the buyer had been delivered this equipment as had been agreed in the contract—that he took the shovel front "as is and where is"; that any action he might have of

this character was against the Fago Construction Company at Bath, where in the early morning hours he had vainly sought to take possession of his purchase.

Place of Delivery

An outline of the rule of law determining the place of delivery in a sales contract occurred in the decision of a lawsuit arising during World War I in relation to consignments of barbed wire to the French Republic, in which damages for delay in deliveries were claimed. There the United States Circuit Court of Appeals said,

"Parties may expressly agree in their writing upon the place of delivery. If the seller has his goods at the shop or produces them at the factory, and if nothing is said in the writing with respect to the place of delivery, the law operates upon the presumption of fact that the seller's place of business was mutually intended."

This same controversy arose half a century ago in Minnesota. There a buyer, having placed an order with a firm in Minneapolis, contended that although the order fixed no place for delivery, the articles were to be delivered at the place of business of the buyer in another city.

Deciding in favor of the seller, who contended that under such a sales contract the transportation of the goods was the obligation of the buyer, the court said,

"If no place be described by the contract the general rule is that the articles sold are to be delivered where they are at the time of the sale. The store of the merchant, the shop of the manufacturer and the farm of the farmer, at which the commodities sold are deposited or kept, must be the place of delivery

when the contract is silent on the subject.

"This rule is not changed by the fact that the sellers did not have the goods on hand at their place of business at the time of the sale but had to procure them elsewhere in order to fill their contract. Potentially and prospectively the goods were as if then situated in their store at Minneapolis."

Some Supporting Precedents

The seller of this shovel front defended the action brought to recover the value of this part of the equipment on this principle, that was the law in England before the independence of this country and is the law today. In all but fourteen of the states this old law is embodied in a statute. That statute in New York State, which governed the interpretation of delivery in relation to this shovel front at Bath, is,

"Whether it is for the buyer to take possession of the goods or for the seller to send them to the buyer is a question depending in each case on the contract, express or implied, between the parties. Apart from any such contract, express or implied, or usage of trade to the contrary, the place of delivery is the seller's place of business if he have one, and if not, his residence; but in case of a contract to sell or a sale of specific goods which, to the knowledge of the parties when the contract was made, were in some other place, then that is the place of delivery."

A lawsuit came before a Federal court in Kentucky over the delivery of slag from an iron works plant. The slag was run in liquid form from the furnace through a trough into a pit where it was stored. The buyer had contracted "for the slag in the pits" produced at the iron

works over an eighteen months period, and insisted upon the seller's obligation to transfer the slag to the buyer's place of business. "This language," said the court in that case, deciding in favor of the seller, "means that there was to be an acceptance of the slag in the pits and not elsewhere."

A decision of the Supreme Court of Massachusetts relating to this same question of delivery has served often as an authority in later decisions. There an agreement had been made for the purchase of waste from a factory. When suit was brought to recover the amount agreed to be paid, the buyer claimed in his defense that no delivery had been made.

"By the terms of the contract," said the court, "the purchasers were

this Bucyrus shovel had fulfilled his contract in so far as *the place for the delivery* of the shovel sold under the contract was concerned. No further obligation in that regard rested on him under the contract. The place of delivery was the place at which the equipment was when the sale was made.

When Title Passes

A famous decision of the Supreme Court of the United States setting out the obligation of the seller to deliver goods, was made in a lawsuit over a contract by the Standard Oil Company of Cleveland for the purchase of a million white oak barrel staves.

The manufacturer under this agreement was to make and deliver the staves properly piled in some

principle of law governing the controversy over the delivery of this shovel front, said in that decision,

"In a contract of sale if no place of delivery is specified in the contract, the articles sold must, in general, be delivered at the place where they were at the time of the sale unless some other place is required by the nature of the articles or by the usage of the trade or the previous course of dealings between the parties or is to be inferred from the circumstances of the case.

"The rule is universal that if a place of delivery is prescribed as a part of the contract, the buyer is not bound to accept a tender of the goods made in any other place nor is the seller obliged to make a tender elsewhere."

Obligation to Deliver

There are however, *two factors* in the delivery of goods under a sales contract, the place of delivery and the transfer of possession. The federal court in its decision of this action for the value of the shovel front, called attention to the other feature in the sale of goods, quoting a New York court decision in which it was held,

"Where the word 'delivery' is used in a contract for the sale of goods without qualification by other words, it seems to me that it means not merely an offer to transfer or even a parting of possession, as by a transfer of custody by an actual completed transfer of control of the goods, but a transfer sufficient to enable the seller to sue for goods sold and delivered, instead of for goods bargained and sold or for breach of a special contract."

In a decision by a Texas court in relation to the delivery of goods in a sale, this same rule of law was laid down, "In the absence of an express or implied agreement as to what shall constitute delivery, the general rule is that as between the parties themselves, the property is delivered whenever the seller has done *everything which is necessary* to be done in order to put the property completely and unconditionally at the disposal of the buyer."

The Third Party

Here the shovel front was under the control of a third party, the construction company at Bath, New York, and the equipment being in the possession of a third party could not be transferred within the scope of these definitions to the buyer.

The statute governing the sale and
(Please turn to page 366)

REFERENCES

Gill Construction Co. v. Kaufman, 196 Fed. 2d 800

Kokomo Steel & Wire Co. v. Republic of France, 268 Fed. 917

Janney v. Sleeper, 16 N.W. 365, Minnesota

New York Personal Property Law, Sec. 124(1)

Middlesex v. Osgood, 70 Mass. 447

Hatch v. Standard Oil Co., 100 U.S. 557

Stanley v. Dryer, 70 Misc. 561, New York

Ellis v. Riddick, 78 S.W. 719, Texas

to have all the waste made. No weighing or measuring was necessary therefore, to ascertain the quantity, and the price was a fixed sum, not dependable on the amount of the article sold. All that the seller was bound to do was to be in readiness to deliver the waste when called for by the purchaser. No place of delivery was specified in the contract.

"The mill of the seller where the waste was made and sold, therefore, was the place where the parties to the contract were bound to make and receive the delivery."

Under the law as it is in relation to the place of delivery, the seller of

convenient place under the control of the buyer and, upon the piling and counting of the staves, "the delivery of the same shall be complete and said staves shall then become and thenceforth be the property of the buyer, absolutely and unconditionally."

When approximately a hundred thousand of these staves had been set aside in this manner, they were seized by a sheriff in an action by a creditor of the manufacturer, and the Standard Oil Company sued to recover what they claimed to be their property and not the property of the manufacturer.

The court, in reference to this

Let's Humanize Our EXPEDITING

By **Gordon J. Groenewoud**, Assistant Purchasing Agent, Keller Tool Company, Grand Haven, Michigan

THE term "expediting" is one that has great significance in today's industrial world. The expeditor came into prominence as a result of the tremendous impetus of World War II military production. Countless times he was the sole reason for making possible the continuance of a production line when a shortage threatened to interrupt its vital flow.

One could write countless pages on the workings of the industrial expeditor if he discussed all of the types and probed the areas in which they function. It is not our purpose to consider the whole expediting field in this discussion. We are primarily interested in expediting tech-

niques as they are used in effecting delivery of purchased items.

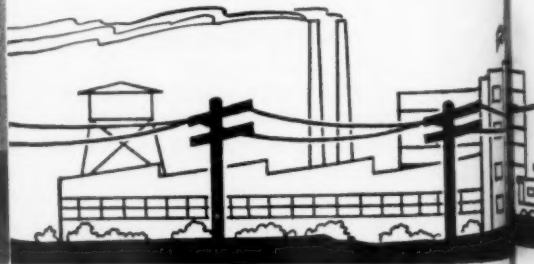
Even in this limited field the scope of the operation varies widely from one plant to another. The large corporation often sends the professional expeditor out into the vendor's plant, where he stays until regular shipments are a reality; this may mean days or even weeks. The small manufacturer cannot operate on such an extensive scale. In most instances the buyer himself does the expediting—often without leaving his own chair. To be a successful expeditor while on the spot is one thing, but it is quite another matter to effect a delivery without the pressure of on-the-spot contact.

Regardless of the scope of one's expediting program there are some basic rules which must be recognized if one would be effective.

Expediting must be predicated on a desire for long range success, which can only result from good relations between the buyer and his vendor over an extended period of time. If these relations are based on mutual understanding, the expediting from the office chair can be effective just as well as an on-the-spot contact.

Don't Get Callous

We must guard against the danger of letting our jobs become dull and monotonous. We must keep a fresh viewpoint at all times. The lack of such an attitude is a prevalent fault among today's workers in all fields. It is a common complaint against individuals such as store clerks, waitresses, and elevator operators, but the business executive, too, is guilty of this charge. Among the former group this indifference is exemplified by a lack of animation and a face devoid of expression. The bored executive is characterized by the same lack of animation, but often it is coupled with an overly aggressive, gruff, and intolerant attitude. When our daily work loses



the glitter of new experience, we have lost a vital ingredient in our lives.

The roving expeditor is particularly susceptible to this callous attitude. The transitory character of his job is conducive to this tendency, and the "big stick" which he wields is also a contributing factor. He can be of valuable assistance to the vendor and also to his own employer if his demeanor inspires the confidence of those he contacts. His very presence is a constant reminder of his purpose for being there, hence an invective attitude can accomplish nothing additional. Not only does his presence imply the current need, but he is a symbol of future orders and that is an indirect force which has great impact. Needless to say, this type of expediting is extremely effective.

You're Dealing With Persons

Although not directly stated, we have implied that expediting is pretty much a personal matter. Without some person being conscious of your need and willing to do something to satisfy that need, you can expect no relief; that's obvious. It is not difficult to accomplish the first factor, but the second one requires a generous portion of ingenuity and tact. You may be able to solve the immediate problem through a strictly impersonal and dogmatic approach, but be assured it will not work often. It is regrettable that some of us never learn to find the responsive chords in others, so that they will do for us what is mutually pleasing and beneficial. This is a skill that is not easily developed, nor consistently successful, but it is a challenge nevertheless, and a goal worth attaining.

A buyer I once knew was very cocky about his method of meeting an emergency requirement. In his day to day contacts he overlooked the opportunity of establishing a common bond with his suppliers or the order correspondents with whom he normally dealt. In the emergency, therefore, he had no effective relationship built up; it was his

practice then to contact a high ranking official of the supplier company, whose name he obtained from one of the directories. It is apparent that this procedure could be a one-time deal only, or at least could be used only on very rare occasions.

In by-passing the usual channels, it is inevitable that sore spots will be developed, because a top level contact will cast a definite reflection on the efficiency of order department personnel. Under such conditions the handling of future orders will doubtless reflect the resentment which has been aroused. Such action can only be justified where it is not possible to get the necessary service because of the laxness of designated personnel.

Find the Common Bond

Before one can become effective in any relationship he must develop a common bond. In business relations this is often very hard to do because of unreceptiveness and because one's personality must be projected out over the telephone, or in the letter or telegram.

In many plants there are hard and fast rules about whom you must contact and then if you draw a "hard nut"—that's bad. In other companies there is some freedom, and when this condition prevails it is good practice to systematically try one and then another until you reach a responsive chord in someone. Careful handling of this individual will usually bring its rewards in service and helpfulness.

Yes, I am suggesting that the buyer carefully handle the seller. This idea is still abhorrent to some

who advocate the old line of thinking, but nevertheless it is good policy and practice, as many buyers have discovered, perhaps by the hard way. The buyer is not bestowing any special favors on the seller. It is a relationship for mutual benefit. If this basic fact were a part of every buyer's philosophy, another major milestone would be past in the development of purchasing as a profession, and the general tone of buyer-seller relations would be greatly improved.

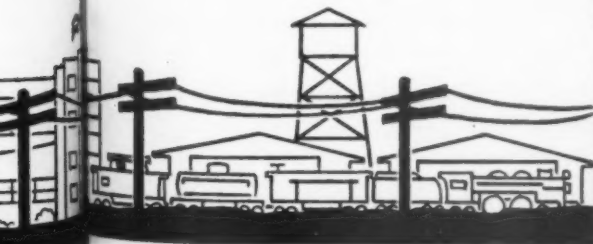
Once you have achieved a congenial relationship with your suppliers you have no autonomous right to make frequent special requests. Good relations will work wonders, but if overworked, these requests for special efforts will be reduced to a nuisance, and that nobody likes.

Put Cards on the Table

As children we were taught the value of absolute honesty, and we insist that our own children adhere strictly to its spirit. In spite of this, some of us live a double standard, for in our own business relations we conveniently ignore this precept. Absolute honesty with a supplier cannot be too highly recommended.

Check with the sales department in your own organization and they will tell you there are certain customers who are constantly complaining. It is impossible to evaluate the real need of these people because they howl "wolf" when there is no wolf, and consequently when the "wolf" does come, no one is

(Please turn to page 374)



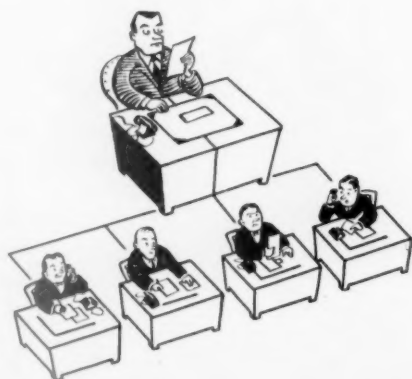
The Responsibility For Materials

- . . . Technical proficiency?
- . . . Organizational plan?
- . . . Executive leadership?

By Stanley E. Bryan, Professor of Management, University of Washington

PURCHASING is the term generally used in industry and management to denote the act and the functional responsibility for procuring materials and supplies used in the production of manufactured goods or in the operation of some type of organization. In such words Stuart F. Heinritz introduces the subject of the responsibility for materials (*Purchasing Principles and Applications*).¹ The purchasing agent is commonly said to be "responsible" for securing the proper materials at the proper price and having them at the proper place at the proper time.

The literature of purchasing presents primarily the technical proficiency required in carrying out this "responsibility". Contributions have been made to the subject of organization through the printed



The greater the capacity of the executive, the less delegation is required; the more delegation of responsibility, the greater capacity for supervision is required.

CRITERIA AND EXAMPLES IN THE GROUPING OF RESPONSIBILITIES INTO DEPARTMENTS OR DIVISIONS

CRITERIA OF SIMILARITY

EXAMPLE

PLACE. Geographical or area location.	Eastern Division, Western Division, Main Office, Branch Office, Shop, Warehouse, etc.
PRIME MOVER. Equipment or power used.	Press room, Milling Department, Electrical Division, Typing room, Ditto group, etc.
PRODUCT. Things or persons dealt with.	Buicks, Fords, Plymouths, Vendors, Customers, Parts, Sub-assembly, Steel buyers, etc.
PROCESS. Method or Skill used.	Rolling, Forging, Office Work, Buying, Medical Department, Filing, Checking, etc.
PRIMACY. Time, Importance of events, or excellence.	Night shift, Third Operation, Most Important, Newest, First Line, Top Level, etc.
PERSONAL. Interest or ability of executive involved.	Odd combinations brought together with other duties under an executive who has interest in them or some unique type of ability.
PURPOSE. Major purpose or objectives to be accomplished; or to control policy.	To economically and effectively achieve such objectives as production, sales, finance, materials supply, buying, expediting, etc.

presentation of organization charts of various purchasing departments. Few writers, however, have waded into the waters of management theory as it applies to the "responsibility" for purchasing. Perhaps the present writer can add a balancing contribution by exploring some of this theory. This theory is important for at least two reasons. First, if recorded in terms of principles it adds to the growing science of mate-

rials management; and second, if violated, a very practical loss in effectiveness results.

Turning to Webster as a start, we find there are two concepts of "re-

¹References in this article are not in the form of direct quotations. They are presented to indicate authors who have made major contributions to the science of management. In each instance these authors have discussed the particular subject much more fully than can be done here.

sponsibility". One is an organizational concept—"a charge for which one is responsible". The other is a leadership concept—"trustworthy, the state of being responsible for one's conduct and obligations".

Alvin Brown emphasizes the fact that organization defines the responsibilities of its members and the relations between them for more effective administration (*Organization of Industry*). Ralph C. Davis defines responsibility as the obligation of the individual to perform properly the functions and duties which have been assigned to him in accordance with the direction of the executive to whom he is accountable. (*The Fundamentals of Top Management*). Elmore Petersen says that responsibility is the obligation and duty of compliance and obedience. (*Business Organization and Management*). These are organizational concepts.

In every specific company the management consists of "people"—real people. George A. Smith points out that these real people are not

organizational phenomenon, followed by the concept of responsibility as a leadership quality.

Responsibility As An Organizational Concept

We might ask ourselves, why do such writers as Brown, Davis, and Petersen consider responsibility to be an organizational concept? The answer lies primarily in the theory back of organizational endeavor. Out of the fulfilling of responsibilities, some project is completed. The project, in turn, contributes to the over-all values which are being created. These over-all values are the objectives for which the organization was created. Thus, stone on stone, the interrelationships of organization grow as the organization is built.

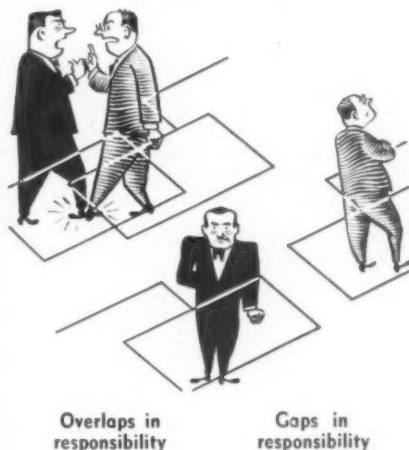
Purchasing, as a separate responsibility, is created to furnish the materials. This project contributes to the production function or the service activity, which in turn contrib-

utes to the over-all objectives of the organization. This reasoning is fundamental. Yet it is often lost sight of in day-to-day operations.

Turning the picture over makes it take on more sense. In organizational planning there should be some specification of the objectives which an organization is attempting to achieve. These objectives are in turn subdivided to form the basis for various departments.

Profit is normally considered an over-all objective in business. (There are, of course, eleemosynary and other nonprofit organizations.) To achieve a profit it is normally necessary to furnish a service. A particular company might set up the objective of furnishing the service of washing clothes, in this case by manufacturing and distributing washing machines. To achieve this objective, the production department is created. Purchasing comes into being because the objectives of profit and production at low cost

Two organizational faults to be avoided:



boxes in an organization chart, that actual practice may differ from what top management thinks is being done (*Policy Formulation and Administration*). This concept brings into view a need for control and coordination. The writer of this article includes "responsibility" as a key quality of executive leadership in materials management (*"Executive Leadership in Materials Management," PURCHASING, February, 1951*). These are leadership concepts.

These two basic classifications of responsibility—organizational and leadership—lay the groundwork for the pattern of the following presentation. First there will be a consideration of responsibility as an or-

DO YOU RECOGNIZE THESE PRINCIPLES IN ASSIGNING RESPONSIBILITY?

In organizational planning there should be some specification of the objectives which the organization is attempting to achieve.

Gaps and overlaps of assigned responsibility should not be created, and if they exist should be eliminated.

Organizational responsibility should be built around functions, not around individuals.

Internal organizational responsibility should carry with it equal authority where such authority can be properly delegated.

Delegation of responsibility should be definite, known and understood by all that it affects.

Delegation does not divest an executive of ultimate responsibility for accomplishment.

The more responsibility delegated the more supervision required.

The amount of supervision required varies proportionately with the extent and degree of responsibility delegated.

Responsibility for duties should be delegated in such a manner as to provide the greatest similarity of duties.

Every executive is faced with a limit upon his span of control, time, energy, interest, knowledge, personality and ability.

The number of delegations should not exceed the executive's span of control. (A rule-of-thumb indicates that in nonroutine operations an executive should not have more than three to six subordinates reporting directly to him.)

Cost of organization should be proportionate to its usefulness.

The responsibility of executive leadership implies a sense of responsibility far in excess of delegated organizational responsibility.

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can be achieved more effectively if the objectives of purchasing are achieved.

It is logical to conclude that there should be a specification of objectives followed by a specification of functions. The objectives of the subdivisions of organization should contribute to, and be in line with, the objectives of the larger divisions of the organization and with the over-all objectives. Perhaps it is appropriate at this point to ask ourselves a second question: Are the objectives of our own organization and its departments well clarified?

Planning Is Not Exact

Organizational planning can never be exact, for it is dealing with human rather than physical forces. There will always be objectives and functions which are not recognized or clearly defined. There will be those objectives which, because of personal considerations, may even run at cross-purposes to the outward objectives expressed. Yet even eliminating such personal road blocks to the carrying out of the over-all objectives, there exist in most organizations gaps and overlaps.

The organizational gap can be readily illustrated by the purchasing function. It is generally observed that purchasing represented a gap in many organizations in the past. By the same reasoning, where purchasing has been recognized, what about some of the other materials functions? Materials conservation is an objective which some purchasing executives may themselves be neglecting. Or there may be more specific functions which are being overlooked. Job specifications may be established for the position of buyer in such manner as to leave gaps. The individual who should be responsible for certain functions may thus not even be aware of their existence. Coordination demands that every possible duty be provided for somewhere (A. Hamilton Church, *The Science and Practice of Management*).

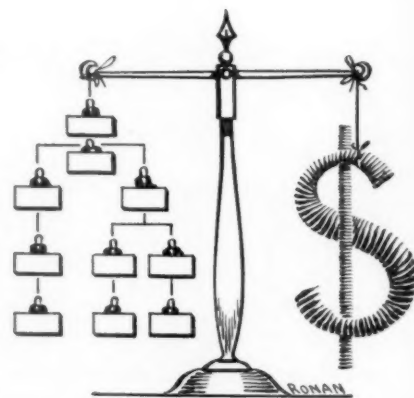
What is everyone's duty is no one's duty. Overlaps in responsibility result in buck-passing, office politics, and confusion. In consequence a larger burden is imposed upon the higher executives who must resolve these difficulties. Where responsibilities are allowed to overlap the door is open to costly organizational "empire building". The aggressive rather than the efficient executive becomes important.

In one company, to cite an ex-

ample, there was an overlap of responsibility between the purchasing department and the foundry department. The foundry superintendent was an empire builder who was duplicating the organization and activities of the purchasing department within his own department. In other companies, unfortunately, in spite of enlightened executives, such examples persist in varying degree. Overlaps should be eliminated.

Functions, Not Individuals

There are three general attitudes toward dividing up responsibilities. First, there are those who believe there should be little or no formal division. Second, there are those who believe responsibility should be allocated according to the specific capacities of individuals in the organization. Third, there are those who believe that responsibility should be divided in such manner as to carry out specific functions.



The cost of organization should be proportionate to its usefulness

There are strong human arguments for the first two attitudes. The first attitude, if put into practice, inevitably encourages competition and creates "strong" executives. There exists a belief that such a practice creates strong natural leaders and eliminates weak executives. Henry Ford was noted for his faith in this process ("Mr. Ford Doesn't Care," *FORTUNE*, December 1933). It can be argued, however, that strong executives may not be the most competent. In fact, as the rough-and-tumble type of organization gives way to the more scientifically designed organization, the strong executive, if not properly bridled, becomes the figurative "bull in the china shop." Organizations in which no formal division of responsibilities are made are rarely good long-run organizations.

Those persons who adhere to the second attitude agree with Thomas R. Jones, who argues that an organization is primarily an arrangement of human beings and human beings cannot be fitted to ideal niches in an organization. (*Theories and Types of Organization*). These people argue reasonably that one must work with what one has. Unfortunately, when one starts building organizations on personalities, particular functions are likely to suffer, and certain objectives are not obtained.

The human arguments associated with the first and second attitudes probably appear to be sound and seem to operate in some instances. The truth of the matter is that certain principles of leadership are offsetting the violation of principles of organization. Strong executive leadership can offset poor organization, but only at the price of reduced total effectiveness.

It is a sound principle of organization that, to be stable, an organization should be built around the functions to be performed rather than around individuals. Some qualification of this principle seems inevitable in actual practice because of the human situations existing. It is, however, a principle which should not be ignored. Organization precedes endeavor, and organization precedes the selection of members and determines the requirements says Alvin Brown. If this were not so, organization would be limited to the capacities of the individuals now members.

The principle of building organization around functions does not imply that the human factor in organization is not important. It is merely divorcing organization as a process from individuals as personalities. Every phase of a company's organization plan should be questioned and tested from a wholly objective point of view without being influenced by its present pattern or personnel (Paul E. Holden and others, *Top Management Organization and Control*).

Authority and Responsibility

Perhaps one of the most persistent organizational axioms is that responsibility should carry with it sufficient authority to complete the delegated assignment. This principle pervades the literature of organization and management. It is quoted as a principle of manufacturing management, for example, by L. P. Alford (*Production Handbook*).

This principle, however, as stated in

bare outline, may be mischievous in the misunderstandings it can create. Certain limitations should be noted (William H. Newman, *Administrative Action*). Obviously, for example, the purchasing executive cannot be given authority over a vendor's deliveries. Yet he is "held responsible" for having the material on hand at the proper place and at the proper time. He is, in effect, held responsible for a vendor's deliveries. Company policy also may serve to limit the purchasing agent's actions in carrying out the function for which he is responsible. Other limitations could be noted. Probably there never was an executive assignment in which there were not responsibilities which exceeded the authority of the assignment.

Allowing for such limits upon the principle of concomitant authority and responsibility, the principle serves as a guide in delegating such



Executive leadership implies a sense of responsibility that may be in excess of the delegated authority

authority as an executive does have. The fact that in some cases authority does not equal responsibility is not sufficient reason to withhold authority when delegating internal organizational responsibility. In general, wherever possible, where responsibility is delegated, equal authority should be delegated also.

The Process of Delegation

Part of the process of good management is the process of delegation. It seems superfluous to say that

delegation should be definite, that it should be known and understood by all it affects, and that adequate authority should be delegated. Yet how often one can observe instances where delegation suffers from neglect and responsibility is not clear cut!

Perhaps one fundamental principle in the process of delegation which should be emphasized is that an executive does not divest himself of *ultimate* responsibility through the process of delegation. In the theory of organization each level in the chain of authority retains responsibility for everything which is done at the lower levels to which parts of that responsibility have been delegated. Robert T. Livingston comments that upon the shoulders of the delegating executive falls the stigma of failure just as on his banner perches the eagle of success (*The Engineering of Organization and Management*).

Sometimes a purchasing executive may be able to avoid accountability for a responsibility which he has delegated, but analysis in such a case will usually show poor organization. In the type of organization where a "strong" executive can develop, such an executive can often "pass the buck" for organizational failures to one of his subordinates. Someone is always getting fired for this or that. This is not good organization.

Looking at the principle of retained ultimate responsibility from another viewpoint, often the superior executive must take pains to explain this principle to his subordinate. A subordinate may feel that once his boss has delegated a duty to him the boss should no longer be concerned with it. The boss, to the contrary, is still very much concerned that the responsibility is carried out properly.

There are certain guides to decisions involving the amount of responsibility to delegate. One such guide is the capacity of the executive. The greater the capacity of the executive, the less delegation is required. We all know purchasing executives who seem to have great capacity for doing things themselves. When a delegation is made, there is created a corresponding need for supervision. Some executives prefer to use their capacity in actual work, rather than in supervision.

The amount of supervision necessary varies with the extent and the degree of delegated responsibility. Where functions are quite similar

the degree is apt to be less significant. For any executive, however, the number and extent of the delegation should not exceed the executive's capacity for supervision. An executive's capacity is determined largely by matters of functional similarity and span of control.

Functional Similarity

The principle of functional similarity is usually quoted somewhat as follows: duties should be associated and combined in such manner as to provide the greatest similarity (Webster Robinson *Fundamentals of Business Organization*). For example, few executives would think of combining production, distribution, finance and research into one department. A production executive would find it difficult to adequately supervise the sales activities as part of his routine. Purchasing executives would not be as effective if they had to handle credit and general accounting functions as well as purchasing.

To complicate the application of the principle of functional similarity, however, are the conflicting criteria of association. The different bases for similarity appear in the accompanying table.

The fact remains that there is considerable difficulty in finding executives with the required range of background, experience, and ability to supervise a number of functionally unrelated functions. The principle of functional similarity acts as a valid guide if unique conditions do not demand a consideration of another alternative (e. g., a purchasing section integrated into the "Western Division" because geographical obstacles prevent a centralized purchasing operation being effective).

Span of Control

In addition to the problem of grouping activities on a logical basis of similarity, there is a factor which might be called an executive's limited span of control. As was suggested earlier, actual limits would vary with individuals. With each individual, however, there exists a limit beyond which he cannot spread his particular time, energy, interest, knowledge, personality, or ability. Although the limit would vary with the individual and the situation, Sir Ian Hamilton noted that the average human brain finds its effective scope in handling from three to six other brains (*The Soul and Body of An Army*). V. A. Graicunas, in a detailed study, arrived at the con-

clusion that the number of lateral divisions in each declining level of executive responsibility should be restricted to a maximum of five (*Relationships in Organization*). With exceptions, reservations, and modifications the various authors of the literature of organization and management accept and expound the principle of limited span of control. (It must be noted that the specific number of "three to six" does not apply to the supervision of highly routine and highly similar duties, but rather to the supervision of the more complex functions).

Purchasing executives might do well to examine their own span of control and the number of executives looking to them for non-routine decisions, personal attention, and advancement. If you are trying to supervise more than this number, you should examine your operations carefully. Don't lend too much credence to apparent exceptions to this principle. Appearances are deceiving. An organization chart may show ten executives reporting to one superior, whereas actual analysis will reveal that five of those executives in reality report on most matters to an assistant of the superior executive. The most important personal comment is that if you are exceeding your span of control, watch out! You may end up as a statistic in the executive mortality column, after which the company will bring in two new men to perform your functions.

Cost of Organization

There are other principles which exist to guide organizational planning. Surely we are all aware of the suggestions of organization planners who say to analyze the jobs to be performed, develop job descriptions and job specifications. Most advocates of scientific management believe it is wise to develop an organization chart, keep it current, and actually use it. As an advocate of the science of management, this writer must agree with these suggestions. He would go much further. He believes it is important to objectively analyze and present the objectives, ethical standards, procedures, policies, and other factors of organization.

One other principle of organization should be here noted, however. It must be recognized as a practical guide to action. The cost of organization, both in money and in effort, should be carefully considered. Executive effort should be

expended in such a manner as to give the best results in organization. Too much attention to the mechanics of organization, too much time and cost, too much planning and insufficient operating—these may compromise and defeat the very success being sought.

To this point the discussion has considered responsibility as an organizational concept. Emphasis has been placed upon organizational planning. Now attention is turned to organization in operation.

Responsibility in the operating of an organization can be related to the characteristics of leadership. One characteristic of executive leadership is a sense of responsibility for his particular function. The executive leader must successfully control and coordinate an operating organization.

Chester Barnard, the author of *Functions of the Executive*, once pointed out that in any kind of organization good executives know how to get action for which they cannot be given the proper authority of command. Nothing is more important to teach a young executive than the fact that in most organizations many members of high and low degree are properly held responsible for actions over which they have no authority. This sense of responsibility is inherent in executive leadership. Good purchasing executives have shown a recognition of this sense of responsibility. They have taken pains to educate top management, convince major executives of action which should be taken, and worked to create better materials management.

The sense of responsibility for good materials management is important to the development of the purchasing profession. This sense of responsibility helps to establish the purchasing executive as a real leader in the affairs of his company. It is not sufficient to avoid responsibility by pointing to lack of authority. Cain asked: "Am I my brother's keeper?" Cain implied that the answer was "No," yet the ages have proved that the correct answer was "Yes." No gardener ever raised a successful crop only by uprooting the weeds; he must plant and cultivate the good plants.

Positive leadership places a heavy premium upon an executive like the purchasing executive. He must go beyond his delegated organizational responsibility to insure that the proper materials are at the proper place at the proper time and price.

The Face of the Clock

By Frank P. Connolly, President, John W. Masury & Son, Inc., Baltimore



Address at the January meeting of the Purchasing Agents' Association of York, Pa.

SOMEWHERE, sometime, I heard the expression, "The Purchasing Agent is 'The Face of the Clock' of business." What a compliment that is for the group that has the responsibility of going into the marts of trade and buying, annually, millions of dollars worth of machines, materials of countless types, kinds, and varieties!

The face of the clock is simple, with its numerals and hands—but its job is the major one, for it tells the time. Back of the clock's face are many intricate springs and wheels, meshing into each other, turning this way and that. This complicated mechanism is known by the very simple term, "the works." If we compare the works of the clock with the works of a manufacturing plant, and look to see what keeps them turning, we will find that this is where purchasing comes in. For from the tiniest screw or bit of paper, the most commonplace lead pencil, to the twenty-ton press, purchasing plays an all-important part.

Far be it from me to tell a group of men whose lives are devoted to buying things, anything about their art. Yet all of us are buyers. Probably the greatest "purchasing agent" in the world is typified by a small bag—a woman's purse. Women are smart buyers, though every nickel they spend has a different value. They will walk a mile to save a penny on a can of beans, but spend

\$25 on a hat or a bottle of perfume without a whimper. We buy for our own needs. There's a wide difference between being a buyer for something we consume or use, and being a purchasing agent for industry, spending millions annually to produce those personal products.

Here, on an advertising page of a great national magazine, we see a picture of a huge diesel locomotive. There was a lot of purchasing needed to bring together all the parts that make this big locomotive possible. Here's another picture, of a \$3,000,000 airplane. Think of all the bolts, nuts, screws, metal, glass, and goodness knows what, that were purchased to build this plane. And who is responsible? A purchasing agent or many purchasing agents.

Here, in a newspaper, is a full page advertisement listing many items for sale at a big department store. A lot of purchasing agents back in manufacturing industry and in the merchandising channels, were responsible for making this sale possible. So it goes through every advertising page in every newspaper and magazine, on every billboard. It is the purchasing agent who is "the face of the clock" that tells the time of business.

There are twelve numbers on the face of a clock. There are twelve important functions — and many more, of course—that a purchasing agent performs. But let's break them

down to twelve, highlighting some of the important things that a purchasing agent must know and be able to put to work if he is going to rate high in his profession.

I. A Sixth Sense

Fortunate is the P. A. who is born with a sixth sense—and I've found many of them. Perhaps this faculty can best be illustrated by the story of the two cleaning women who worked at the studio of the great sculptor Borglum, who carved those giant heads of the Presidents in the granite of the South Dakota hills. They had noticed that the famous sculptor had been working on a large block of stone, carving away, bit by bit, for many weeks. Then, one day, they noticed that the face of Lincoln had appeared out of the stone. One said, "Isn't that wonderful! See what Mr. Borglum got out of that big stone." "What puzzles me," said the other, "is how Mr. Borglum knew that Lincoln was in there."

So the P. A. who can tell how something is going to work out before it is even started, and knows how to get at it, is fortunate indeed.

II. Check and Double Check

Every P. A. knows how easy it is to have an accusing finger pointed at him, even though the guilt for a mistake is not entirely on his shoulders. Sometimes the saving of a few

pennies can cost thousands of dollars in unexpected costs. Here's a case to illustrate the point.

You are all familiar with those little paper stickers automobile manufacturers put on windshields, cautioning one not to drive over 50 miles per hour for a certain period. These, of course, are glued on. But do you know how they can chip glass? A certain type of glue is smeared on the glass and allowed to dry. As it does so, it pulls away a top layer of glass, and the resulting effect is chipped glass.

You may have guessed what happened. A purchasing agent bought the stickers from a new source of supply, which was supposed to know its business and its product. But the new man used the type of glue that chips glass. On every windshield there presently appeared an oblong spot that was beautifully etched or chipped. Imagine the expense of replacing those windshields with new ones, all over the country—a job that ran into thousands of dollars, all for the sake of a saving of a fraction of a cent on the sticker.

III. Economy

The golden thread of economy is one that everyone in manufacturing should have in mind, and especially the purchasing agent. He might well start with his own operations.

One thing that has long impressed me is the simplicity the Woolworth Company uses in its ordering. When they order paint for one of their stores, it comes to us on a thin paper form, about 4 x 7, frequently written in longhand. No more than three copies are ever made; most times, there are only two.

I am not thinking of the saving in paper alone. One of the Woolworth officials said that during war time, if they had to have the many copies some companies use when they place orders, they could never have secured enough help for the filing, mailing, and handling of all those pieces of paper—the countless thousands of copies that are not really needed. Most companies say it is not practical to have such a simple operation—but Woolworth seems to get along okay.

IV. Plus Time

Tom Shipley, who was the leader and inspiring genius of the York Company, once said, "It's the little 'plus time' that makes a business successful." He brought home his point with the following story.

He was a salesman for a company

that would put in a complete waterworks system for small cities or towns, and was working to make a sale to a little place in Missouri. A half dozen other salesmen were there all trying to sell the same set-up for their own companies. Friday night came, and the other salesmen high-tailed it to St. Louis for the weekend. Tom Shipley stayed in town. He had learned that the "big brass" of the town committee was a religious man; he also found out where he went to church. On Sunday morning, when this important fellow came to his church, who was there but Tom Shipley! He greeted Tom and invited him to share his pew. When the collection basket came around, Tom took out a crisp bill—one that crackled, and of fair size—and dropped it in so that the "big brass" could see what he was doing. To make a long story short—Tom sold the waterworks.

V. Cooperation

If there is any man in an organization who can throw a monkey wrench into the works, it's the P. A. He is the one fellow who must cooperate with everyone, and he must



"Watch out for your competitor. He's a hard loser."

be the kind of fellow who will have people cooperate with him. If he is not, his life can be made miserable. All that the fellows out in the plant have to do is to hold up their requests for parts or materials they will need, to the last minute. When they do that, they will have you in hot water all of the time.

VI. Yes and No

The P. A., to be on the ball, can't be entirely a "yes" man. And he surely will not be successful if he

is entirely a "no" man. He must be a "yes and no" man. By this, I do not mean to imply indecision, but rather that he has to know both words and when to use them. A "yes" when material is not up to standard, or when the price is either too high or too low, could prove disastrous. A "no" when goods should be ordered or when a delay is involved, could just about throw a factory entirely to the wolves.

VII. Good Fellowship

With millions to spend, the P. A. is often beset with temptation. We've all read, with indignation, about deep freezes and mink coats, but that's far afield from the courtesy of having lunch or a golf game with a vendor, which is simply a part of good personal and business relations and often does pay dividends to the company.

The writer recalls one experience with some embarrassment. It so happened that there was a big ex football player on our sales force, a fellow with a lot of personality, but one who never "brought home any bacon." I suggested to him that he take the P. A. of a certain ammunition company out to lunch and get acquainted, nothing more or less. He had called on this man many times, but he had never rippled the sales water. Imagine the shock it gave me when, a little later, I called on this P. A. with the salesman. He blurted out, "Mr. Connolly tells me that if I expect to get any business from you, I ought to take you out to lunch." I had to laugh that one off fast and tell the P. A. how the big boy was always joking.

VIII. Efficiency

Of all things, the P. A. must be efficient. He must plan and schedule his buying program, and in addition to the routine buying he must be ready to handle all sorts of special requirements. For example, imagine an order coming in to one of the big automobile companies for 25 maroon cars with white tires, right hand drives, and other specials. The cars are to be delivered in 60 days. The schedule may call for the maroon paint to be in the paint shop, say 7 weeks hence. The special chassis, drives, tires, and all those other little accessories must meet a time schedule. They must be at the point where they are needed right on the dot, or the whole schedule will be thrown out of kilter and the delivery will be missed. The purchasing agent

(Please turn to page 362)

Pick the right equipment — many types available

What the Purchasing Agent Should Know About Air Compressors

By Eugene W. F. Feller

THE AUTHOR has a background of more than twenty years experience as an industrial power engineer, and is widely known for his authoritative contributions to technical publications and manuals in this field.

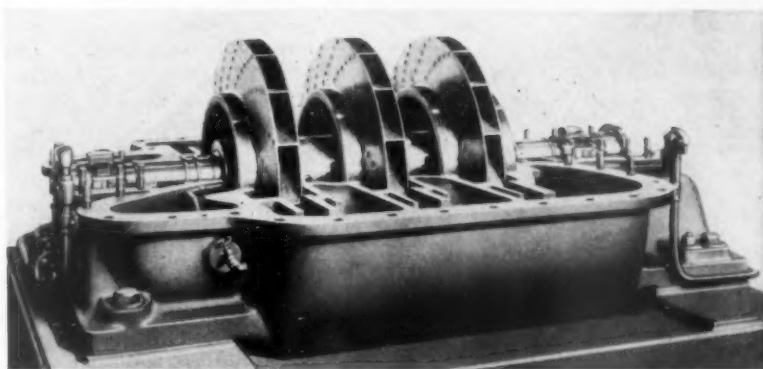


Figure 1. In the centrifugal compressor, air enters at the center (eye) of each impeller and is thrown outward by centrifugal force into a passage that guides it to the center of the next stage wheel. Close seals between casing and shaft prevent back air leakage.

COMPRESSED air is one of the most useful and valuable forms of power serving industry today. Air under pressure now ejects finished parts from automatic machines with shot-gun speed; operates rivet guns, chipping hammers, jack hammers, paving breakers, grinders, polishers, hoists, paint sprayers and sand-blasting equipment; transports materials such as grain, cement, flour, and coal; lifts water and oil from wells, and in emergencies can be used to operate certain types of steam driven machinery. It not only speeds present-day construction, with performs many jobs that increase output from mass-production plants. In every instance, the main problems are to determine (1) the quantity of air needed, (2) the pressure suitable, and (3) what type compressor best fits the job.

Air compressors are made in many shapes and sizes, and are available for pressures from a fraction of a pound to 15,000 lb. per sq. in. Capacities range from 5 to over 130,000

cu. ft. per minute. The most common designs are centrifugal, liquid-piston, sliding-vane, two-impeller and reciprocating. They may be classified according to the method of driving, as (1) steam engine, (2) electric motor, (3) steam turbine, and (4) internal-combustion engine. Further classification divides them into (1) direct-connected (close coupling), (2) direct connected through flexible couplings, (3) reduction-gear coupled, (4) belt driven, and (5) en bloc design, in which the power cylinders are cast integral with the compressor frame.

Another factor of importance in selecting a compressor is the number of stages needed in the compressing cycle to bring the air to its final delivery or distribution pressure. In most centrifugal machines these stages are all contained within a single housing, a practice sometimes followed in the sliding-vane units and reciprocating machines. Normally, the cylinders of a multistage reciprocating compressor are mount-

ed separately and are distinguishable by a difference in size. The other designs usually make up the necessary number of stages by piping one or more individual units in series.

The Compressed Air & Gas Institute suggests a general dividing line for staging, based on sea-level atmospheric intake pressure, as follows: Below 60 lb. per sq. in., use single stage. For 60 to 100 lb. per sq. in., use single stage for capacities under 300 cu. ft. per minute and two stages for larger sizes. For higher pressures use additional stages.

Centrifugal Compressors

Centrifugal machines, Fig. 1 (similar to a centrifugal pump), have a pressure range up to about 125 lb. per sq. in. For pressures under 35 they are classified as blowers. They consist essentially of a casing in which revolve one or more impellers mounted on a shaft. Each impeller and its passage is a stage in the com-

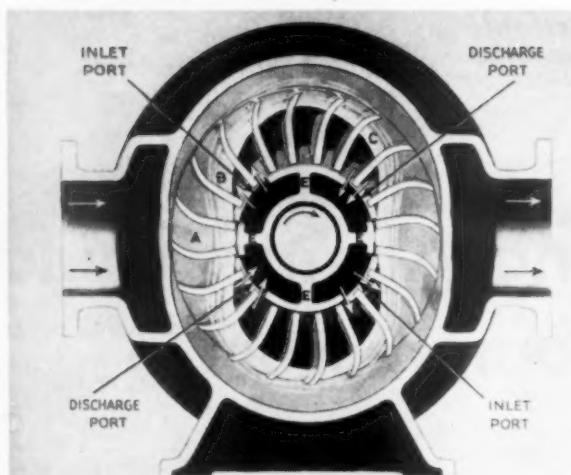


Figure 2. The liquid-piston compressor, with elliptical casing, usually serves for specialized jobs. The entrapped water, which assists in compressing the air, also acts as a cooling agent to remove the heat generated by compression.

pression cycle. As the shaft rotates, centrifugal force compresses the air and induces its flow to the outer rim of the impeller wheel. This creates a low-pressure area at the inlet and air from the atmosphere or next lower stage enters.

Air passing through the impeller is accelerated to a high speed; this velocity is then converted into pressure by deceleration in passages that surround each impeller. Amount of centrifugal force generated depends on impeller speed as well as on air density. Output pressure depends on the number of impellers used in series. Capacity range is practically unlimited; machines have been built to supply volumes of 130,000 cu. ft. per min. Speeds up to 10,000 rpm are common, which makes them suitable for steam-turbine drive. Lower-speed units are motor driven.

Centrifugal compressors have their principal application where extremely large volumes of air are required at pressures up to 100 lb. per sq. in. In large capacities they furnish air for steel and iron blast furnaces, petroleum refineries and copper converters; in smaller capacities they supply combustion air for boiler furnaces, agitating air in ice plants, aeration in sewage disposal plants, and air for transporting bulk material such as flour, cement, grain, etc.

Liquid-Piston Units

The liquid-piston compressor consists of a round multi-blade rotor revolving in an elliptical casing, Fig. 2, partly filled with water. A continuous supply replenishes any water carried out to the separator with the discharge air. For exacting services, the compressor seal water can be chilled to eliminate moisture

condensation in pipelines. Special designs are available in single stage for pressures up to 75 lb. per sq. in.; for higher pressures two or more units operate in series. Capacities range up to 5,000 cu. ft. per minute.

The curved rotor blades, together with supporting side shrouds, form a series of cells around the rim. Rotation throws the water out from the center to form a solid ring that rotates with the rotor but follows the casing's elliptical contour.

Starting with the cell A, which is now filled with water and moving in a clockwise direction, we can follow its movement. As the cell moves over inlet port B, centrifugal force causes the liquid to move out into the ellipse so that air takes its place. The air is then carried along until it reaches point C. Here restricted space causes water to re-enter the cell, forcing the air out of the discharge port.

Sliding-Vane Machines

The sliding-vane machine, Fig. 3, consists of a cylindrical or cam-shaped casing in which a round rotor, smaller in diameter than the casing bore, is mounted eccentrically. A number of radial slots cut along the entire length of the rotor hold sliding vanes, made either from metal or non-metallic material. As the rotor revolves, the vanes, held against the casing wall by centrifugal force, pins, or springs, form a number of cells in the space between the rotor face and casing. Because of the rotor's eccentric position, the cells vary in size from maximum to minimum during each revolution. Air entering the intake is trapped between two vanes when their enclosed area is greatest, carried around to the discharge and forced out as the cell area diminishes.

Close clearances between rotor ends and casing caps, together with a lubricating-oil film, serve to seal against air leakage. In some machines the rotor is free to float between the two end caps; others use a thrust bearing to prevent end rubbing.

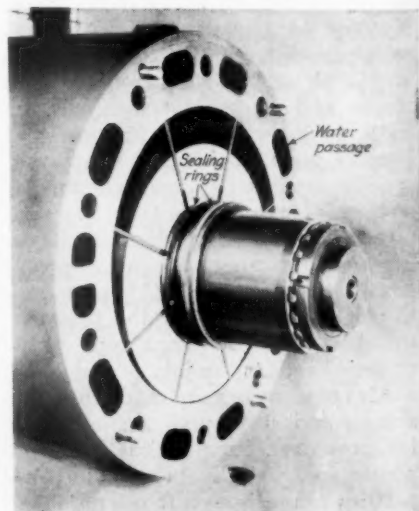
Sliding-vane compressors are made for pressures up to 125 lb. per sq. in. and capacities up to 2,000 cu. ft. per minute. Generally, one machine serves for pressures up to 50 lb. per sq. in., and two machines in series (two-stage) for higher pressures. Operating speeds vary from 450 rpm for large-capacity units to 3,600 rpm for small ones, suiting them to motor drive.

Two-Impeller Compressors

Two-impeller compressors are primarily suited for pressures from 10 to 15 lb. per sq. in. and for higher pressures by operating two or more units in series (multi-staging). Capacities up to 50,000 cu. ft. per minute are common. The two impellers mount on separate parallel shafts inside an oval casing and rotate in opposite directions. Their contour is such that a clearance of a few thousandths of an inch is maintained at all points during a revolution.

In Fig. 4, impeller A, rotating in a clockwise direction, is in a position where its bottom tip has just cut off the opening to the inlet and the top tip is ready to open to discharge. Air is trapped between the left-hand side of the impeller and casing, which is not open to either the suc-

Figure 3. The sliding-vane compressor has a rotor mounted off center in the casing. The sliding vanes trap and compress the air as they travel around with the rotor, moving in and out of their slots according to the clearance between rotor and casing.



tion or discharge. As the impeller continues to rotate, its top tip opens to discharge and the bottom tip forces the enclosed air out into the system. This action is repeated twice for each impeller revolution or four times for each turn of the driving shaft. Absence of internal rubbing between lobes eliminates any need for lubricant except a small amount of grease at shaft shoulders. Air is, therefore, delivered free of oil.

Because proper clearance must be maintained between lobes, their driving gears are adjustable for tooth wear. A gib key in one gear permits accurate location of the lobes with relation to each other and obviates using an offset key to shift the gear. Axial clearance between lobe ends and casing heads is just sufficient for expansion caused by the heat of compression. This machine serves for blowing cupolas, and aerating water and sewage.

Reciprocating Compressor

Of the several types of air compressors built, the reciprocating-piston machine (similar to a steam engine), Fig. 5, finds widest use, largely because of its ability to meet the needs of the greatest number of compressed-air users. The most common is the horizontal machine, although many vertical, V- and L-angle units are built. V-angle and vertical machines are suitable where floor space is limited; horizontal machines need more floor space but less headroom.

Arrangement of cylinders further divides reciprocating compressors into straight line or tandem, and in-line or parallel along a common

drive shaft. Double duplex units form the letter *H*, with a cylinder at the end of each leg and the drive shaft forming the crossbar.

Piston action within the cylinder determines whether a reciprocating compressor is single- or double-acting. Practically all so-called stationary units are double acting—they compress air during both the forward and return strokes of the piston. But the majority of portable and semi-portable machines are constructed in the single-acting design, that is, they are built like an automobile engine and compress only during the forward stroke, Fig. 6. Other conditions being equal, and disregarding piston-rod volume, the double-acting machine has twice the capacity of the single-acting.

Both single- and double-acting reciprocating machines compress air in one or more stages, which classifies them as single- or multi-stage compressors. Choice as to the number of stages needed depends on such widely varying factors as compressor size, ratio of compression, discharge temperature limitations, power cost, continuity of service and relative permanence of installation.

Reciprocating-compressor construction for stationary duty follows all the designs just described; portable and semi-portable units being mostly V-angle and vertical. When compressed air is needed intermittently, or its uses are widely separated, portable or semi-portable machines may prove more economical than a central installation with several long distribution lines. They can also be used to boost the air supply

at local points on long distribution systems served by an overloaded central plant.

The portable or semi-portable compressor is a complete compressor plant, light enough to be easily moved, yet strong enough to withstand the severe service of construction work. Modern designs consist of single or two-stage air or water cooled units fitted with electric motor or internal combustion engine drive. Entire unit including compressor, engine, air receiver, fuel tank and other accessories mounts on a steel frame enclosed in a metal housing. The portable unit, mounted on its own truck, does not require special hoisting facilities for moving; this makes frequent transporting easy. Semi-portable compressors, usually mounted on skids to serve as a foundation, permit moving the machine from place to place at infrequent intervals.

Single-acting reciprocating units use the splash system of lubrication for cylinder walls and bearings (similar to an automobile engine). Double-acting cylinders require a force-feed supply furnished by a mechanically-driven lubricator. Pipes fitted with check valves carry the oil into each cylinder; as the piston passes, oil gathered up between the rings serves for lubrication and also helps seal the piston against leakage.

Heat of Compression

Because compression heats the air, some means must be provided to keep a compressor from reaching a dangerous temperature. Normally, machines that supply air under 35

Figure 4. The two-impeller compressor is used to furnish large volumes of air at low pressures. Mating position of the lobes is held by driving gears. Clearance between lobes and casing is kept to a few thousandths of an inch, to minimize leakage.

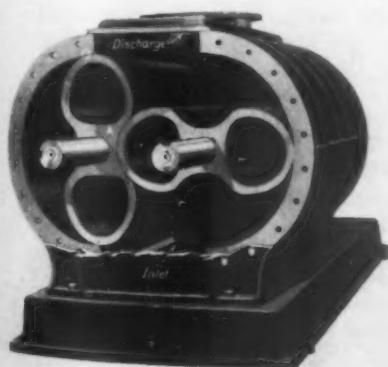


Figure 5. The double-acting reciprocating compressor compresses air during both forward and return strokes of the piston. The bundle of tubes on top of cylinder is the intercooler, which cools the air as it passes from the low-pressure to the high-pressure cylinder.

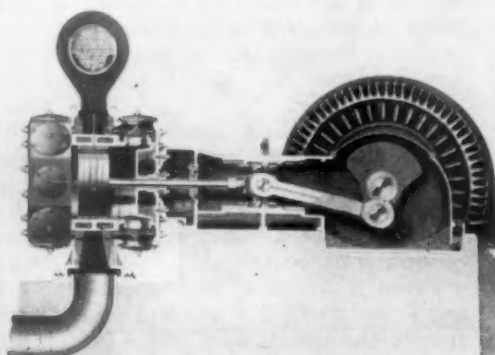
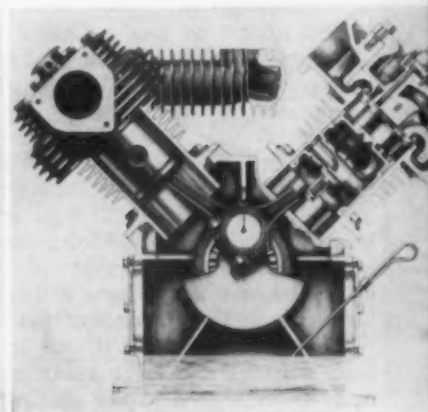


Figure 6. A two-stage, single-acting reciprocating compressor. It has fins on the cylinders and manifold for atmospheric-air cooling. Lubrication is by the splash system. This is a typical unit for portable and semi-portable applications as well as for stationary use.



lb. per sq. in. pressure do not need special cooling systems, but for higher pressures water must be circulated through the casing or cylinder jackets, or atmospheric air must be blown over their finned surfaces. Also for economy, air leaving each stage (or series of stages in a centrifugal machine) of a multi-stage installation must be cooled before it enters the next stage.

Many stationary reciprocating units of smaller size as well as numerous portable compressors use atmospheric air circulation to cool the cylinders. Fins cast integral with cylinder walls furnish additional radiating surface. Another method is to cast passages in the cylinder walls and heads for cooling water circulation. Circulating cooling water through cylinder walls or air over the cast fins removes some of the compression heat and keeps the cylinders and valves at reasonable working temperatures.

It requires about 35% more power to compress air in one stage to 100 lb. per sq. in. without cooling, than when the heat is taken away as fast

as it develops. From a practical mechanical standpoint it is impossible to remove all of the heat as fast as it develops. But, you can remove a fair portion by cooling the machine casing or cylinders, and by multi-staging with inter-coolers between stages of compression. A single-stage machine for 100 lb. per sq. in. requires 20% more power than a two-stage unit. Water is a better cooling agent than air, but this type machine—requiring more intricate castings and water piping—sometimes costs as high as 40% more installed than one using atmospheric air for cooling purposes. On the other hand, unit operating costs with water cooling averages about 10% less.

Moisture In Air

Since atmospheric air contains moisture, compression squeezes the moisture into a smaller volume and heats it at the same time. If the air temperature remains high, the moisture stays in its vapor state. But if the compressed air is cooled to its original temperature, a large part of

the original vapor condenses to water. Passing the air through coolers, both between stages of compression and after final compression, condenses the vapor to water so it can be removed. Otherwise the air cools in the distribution lines and precipitates water that may freeze in cold weather. Water also injures air-operated tools by washing away the lubricant.

Whether the final discharge air is cooled before entering the storage receivers and distribution system depends on how soon it is to be used, because cooling removes heat energy added to the air during compression. Therefore, if this heat energy can be converted into useful work in tools immediately adjacent to the compressor, without the air having to travel through long cool lines, aftercooling is a distinct disadvantage. For example, a portable machine furnishing air to operate nearby jack-hammers or paving breakers need not be equipped with an aftercooler, but if the air is distributed in long lines aftercooling is usually a necessity.

Yes, that Letter was Mailed

By A. M. Dewey,

Assistant to the Business Manager,
Denison University, Granville, Ohio

Form 3817
Rev. 9-37

Post Office Department

Received from:

AFFIX STAMP
AND
POSTMARK

One piece of ordinary mail addressed

to

THIS RECEIPT DOES NOT PROVIDE FOR INDEMNIFICATION

U. S. GOVERNMENT PRINTING OFFICE 5-10335

POSTMASTER,

THE article by Leslie Childs, entitled "Was That Letter Mailed?", appearing on page 114 of the January issue, brings out the important point that evidence of mailing a letter must be produced in order to make letter copies admissible as evidence in legal controversies where the addressee does not acknowledge receipt of the original letter and where a dispute hinges upon the contents of the letter. Mere evidence that the letter was written, and of regular office practice in regard to the mailing of

letters, is not sufficient to satisfy a court of law, and many cases have been lost through lack of some positive evidence that the letter was actually mailed.

Most purchasing agents are of course aware of the use of registered mail to show evidence of mailing a letter. The cost of mailing a "no value" registered letter, with return receipt, is 37 cents.

There is a much less expensive, and equally effective, method available in the use of Post Office form 3817, which requires only a penny

postage stamp. This form is a small (4" x 2½") receipt from the Post Office Department, showing that a letter addressed to a designated person has been mailed on a certain date. It is true that this does not actually identify the letter mailed, but neither does a registered letter. A witness will be needed in either case to prove this point. But it does provide the evidence of mailing.

I have used form 3817 on many occasions to show that I had mailed a letter. Other purchasing men may find it similarly useful.

The Pulse of Business

APRIL, 1953

PURCHASING'S Summary of economic conditions

Two developments in separate parts of Manhattan island on the same day point up the many-sided problem facing all of us. While peace feelers and reports of cuts in defense spending set off a wave of selling of aircraft and industrial stocks in Wall Street, the Czechoslovak delegate was telling the United Nations Assembly that U.S. was committing "acts of aggression" through distribution of funds under the Mutual Security Act. And about the time the market was closing, the Soviet delegate Gromyko was "proving" to the Assembly that M.S.A. money was paying for a plot by Washington to overthrow the "peaceful democracies" of Eastern Europe.

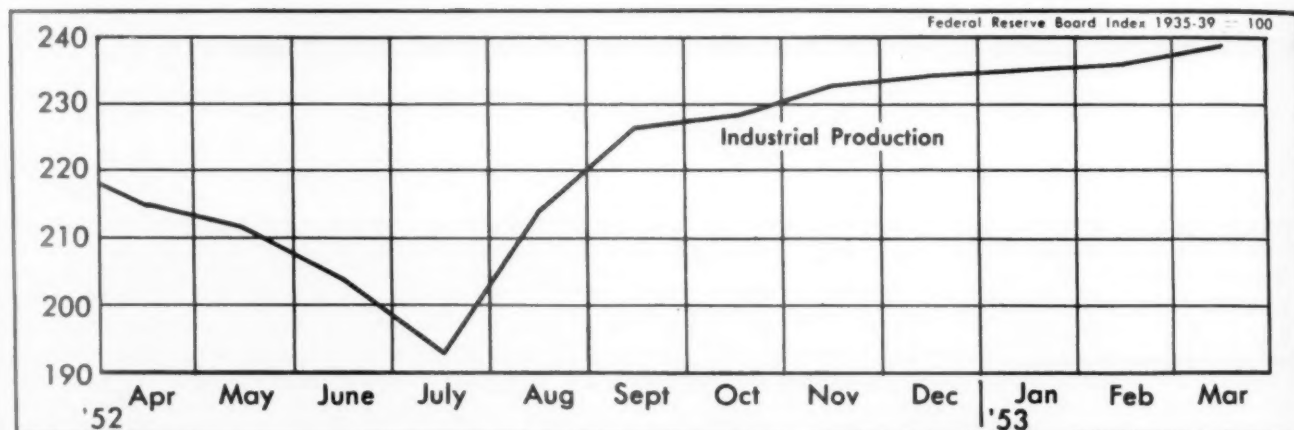
Although Wall Street is a little over-sensitive as a business barometer, its reaction does reflect a general tendency in this country to ease up, and look on the switch in power in the U.S.S.R. as a possible step toward peace in the world. Malenkov is new on the job, he doesn't have the great personal power and appeal of Stalin, and he has already said that difficulties between the great powers might be worked out amicably - that's the kind of sentiment you hear expressed lately.

But Mr. Gromyko and friends are noisy proof of the maxim about not putting your eggs in one basket. A more realistic outlook on the part of American business men will show that there has been no change in the basic Communist philosophy, no change in its revolutionary aims. The virulence of the Red officials' denunciation of our M.S.A. program and our defense effort, indicates that they are effective in thwarting Soviet ambitions. It's a fair bet that the administration is going to continue giving them priority - even if it means that tax cuts and economy moves have to suffer. It will be a long pull before the tension is over - and an expensive one.

On the domestic side, there are some optimistic signs. Business, for instance, expects to spend a record amount on plant and equipment this year - and that's always a big factor. And the latest Federal Reserve Board survey shows that consumers expect to spend more this year for homes, autos and furniture than they did in either 1951 or 1952.

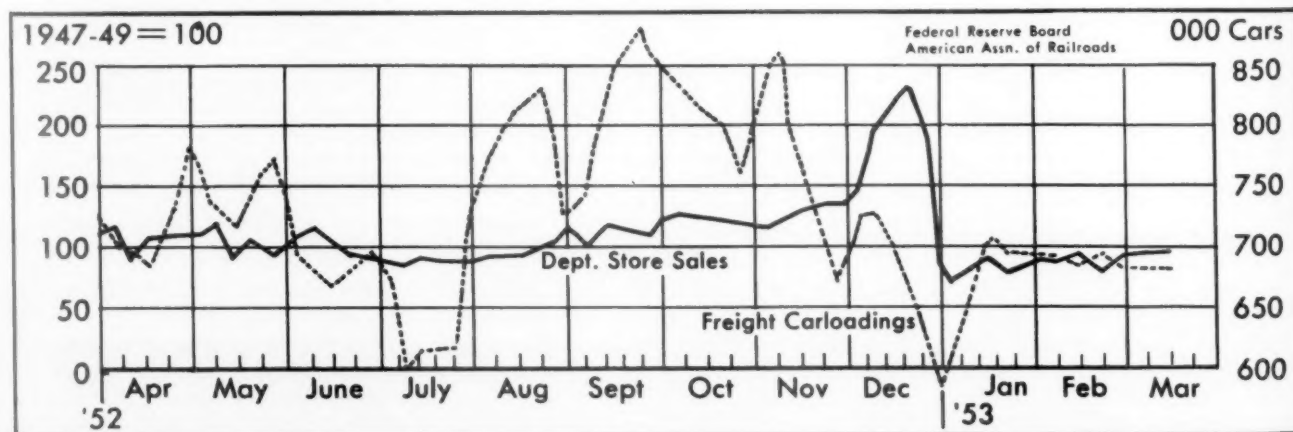
THE PULSE OF BUSINESS

PRODUCTION



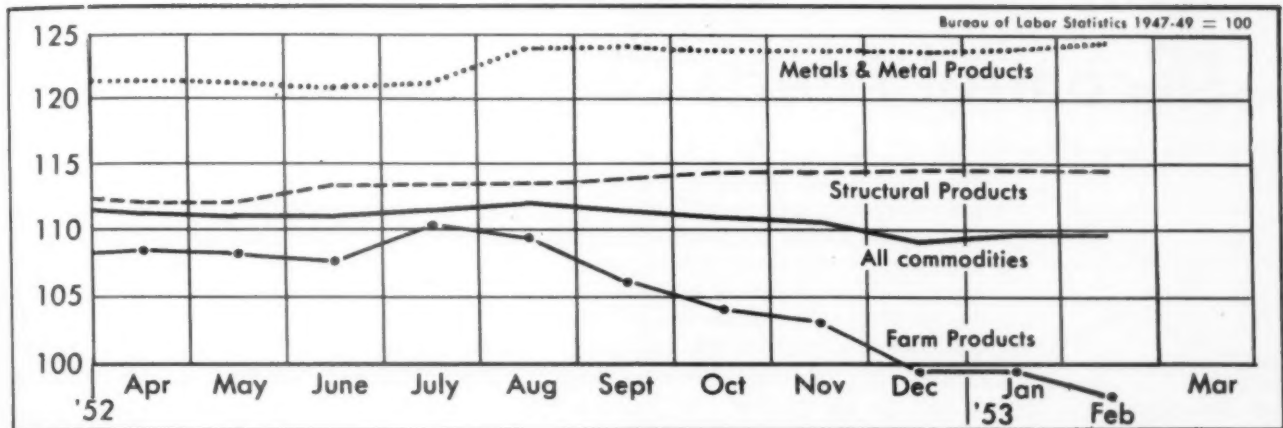
	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN MONTH	% OF CHANGE IN YEAR
Industrial Production Index	1935-39=100	239 (est.)	237	222	+ 0.4	+ 7.6
Steel Production (Weekly)	000 net tons	2,256	2,248	2,098	+ 0.3	+ 7.4
Electric Power Production (Weekly)	mil KWH	8,173	8,129	7,497	+ 0.5	+ 9.0
Bituminous Coal Production (Weekly)	000 net tons	8,110	8,545	9,879	- 5.1	-17.9
Auto, Truck & Bus Output (Weekly)	units	150,202	139,172	107,244	+ 7.8	+40.1
Petroleum Output (Daily Average)	000 bbls.	6,343	6,427	6,321	- 1.6	+ 0.3

TRADE



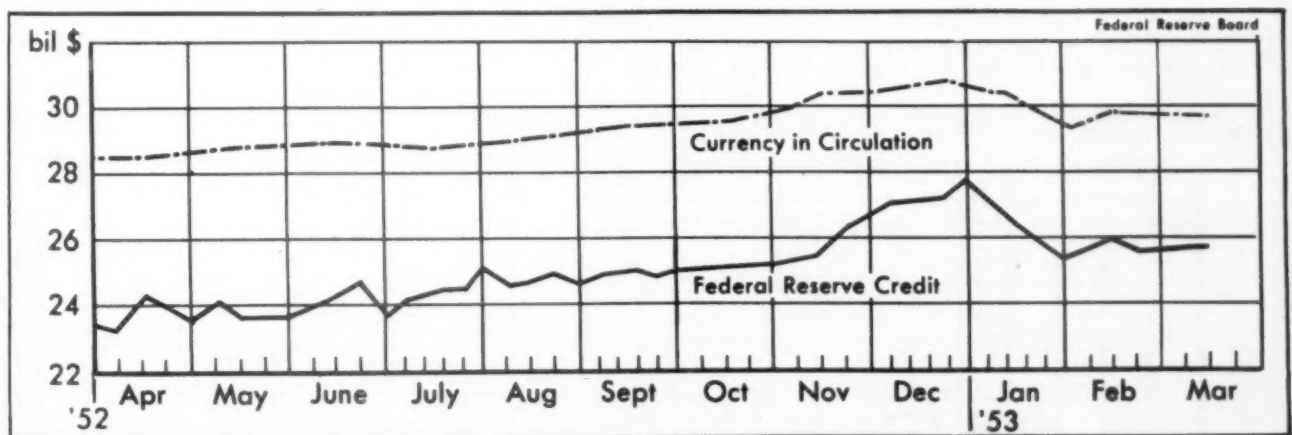
	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN MONTH	% OF CHANGE IN YEAR
Dept. Stores Sales Index (Fed. Res.)	1935-39=100	95	88	88	+ 9.1	+ 9.1
Commercial Failures (Dun & Bradstreet)	no.	180	159	170	+13.2	+ 5.9
Freight Carloadings	cars	685,016	690,744	713,112	- 0.8	- 3.9
Miscellaneous Carloadings	cars	374,126	371,485	368,002	+ 0.6	+ 1.7

PRICES



	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN	
					MONTH	YEAR
All Commodities (BLS)	1947-49=100	109.6	109.9	112.5	- 0.3	- 2.6
Farm Products	1947-49=100	97.9	99.8	107.8	- 2.9	- 9.2
Metals & Metal Products	1947-49=100	124.5	124.0	122.6	+ 0.4	+ 1.5
Structural Products	1947-49=100	114.6	114.8	112.9	- 0.2	+ 1.5
Steel Billets (Pittsburgh)	net ton	\$ \$59.00	\$59.00	\$56.00	0	+ 5.3
Steel Scrap, heavy melting, Pitts	net ton	44.75	43.00	43.00	+ 4.1	+ 4.1
Copper, electrolytic	lb.	.271½-.34	.241½	.241½	+12.2-38.8	+12.2-38.8
Rubber (rib-smoked sheets)	lb.	.265⅞	.271½	.501½	- 3.2	-47.2
Wheat, No. 2	bu.	2.701⅞	2.661¼	2.83	+ 1.3	- 4.5

FINANCE

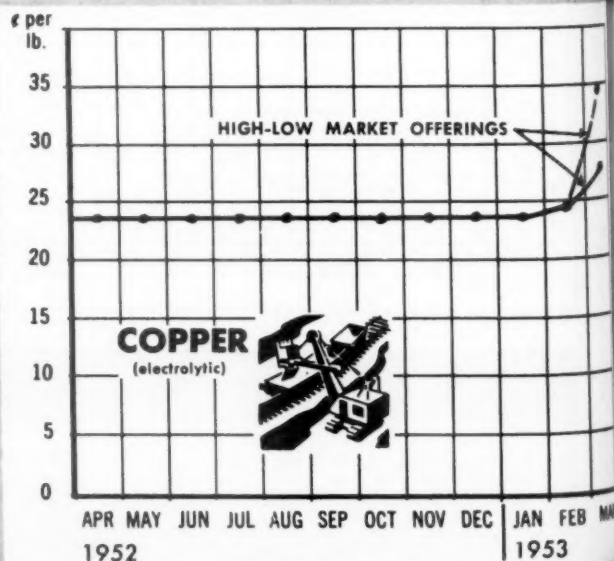
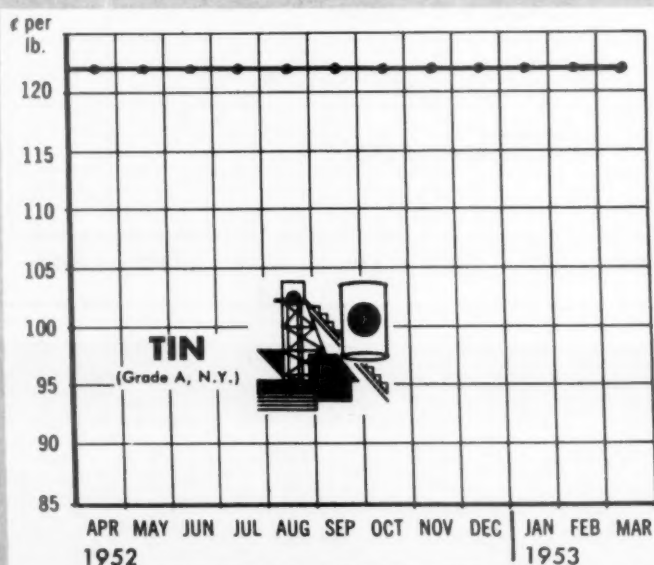
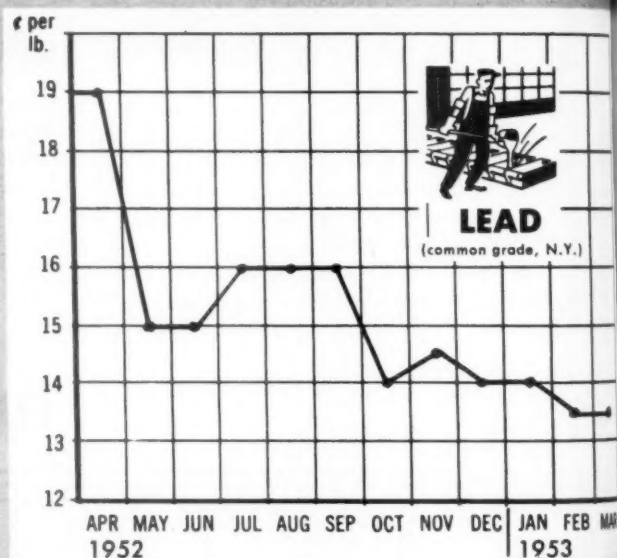
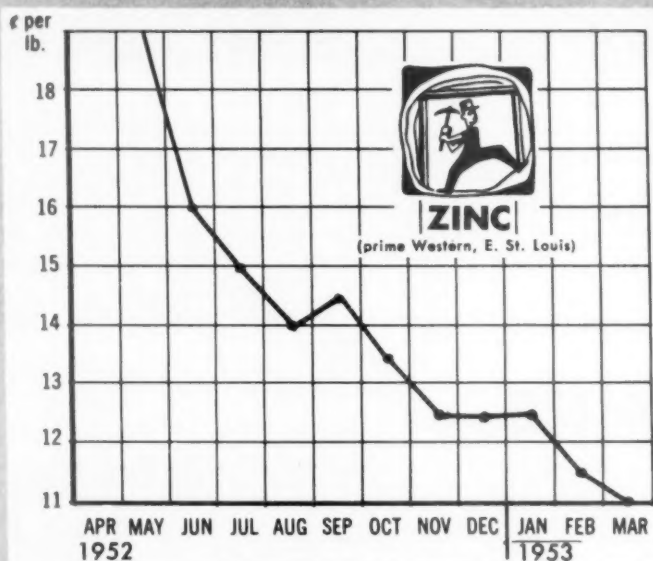


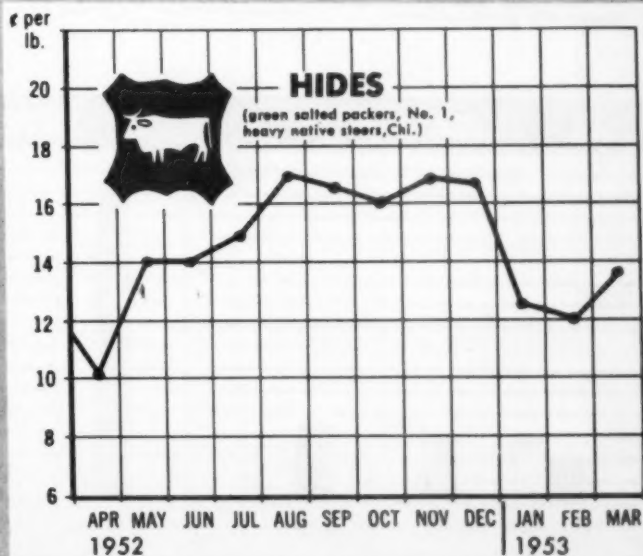
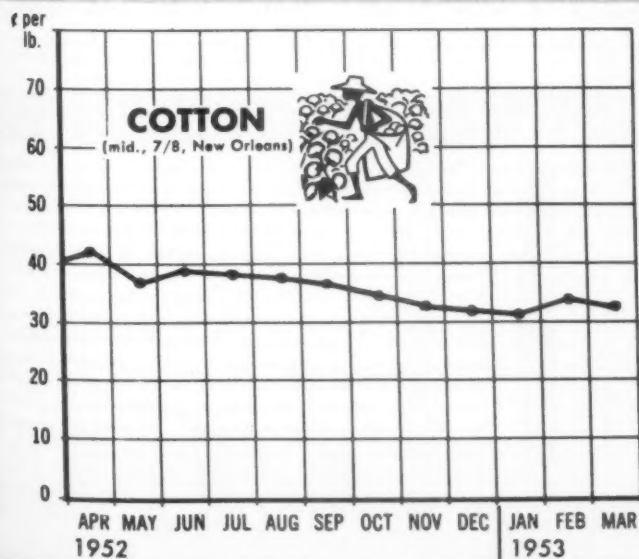
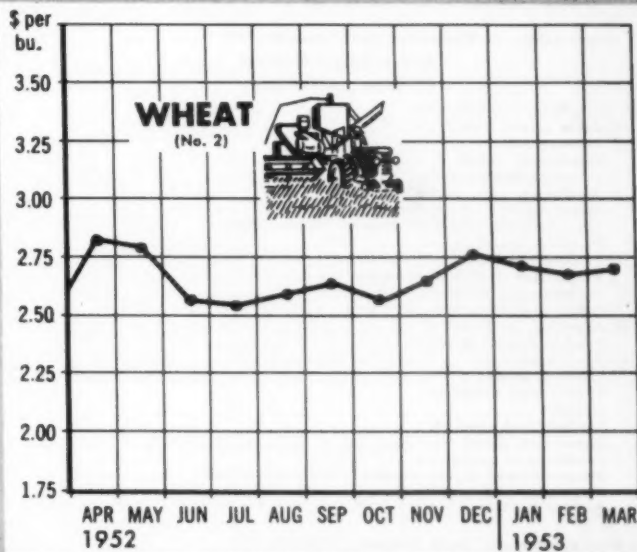
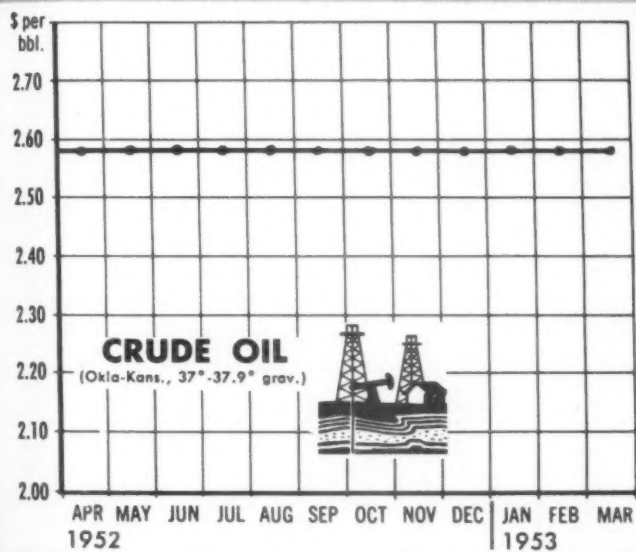
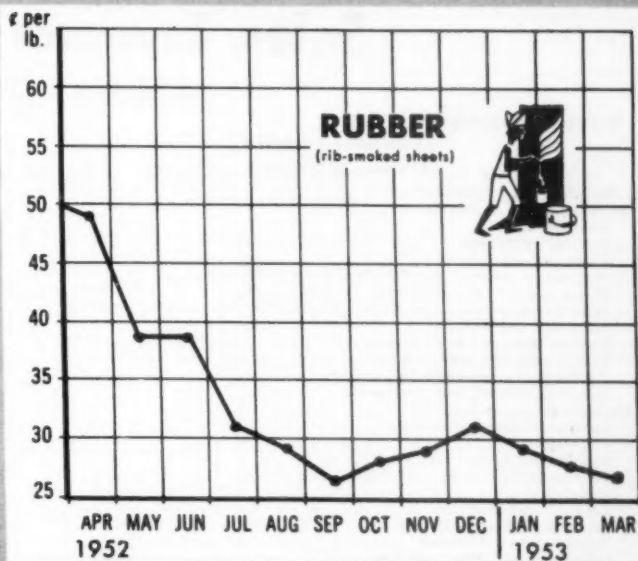
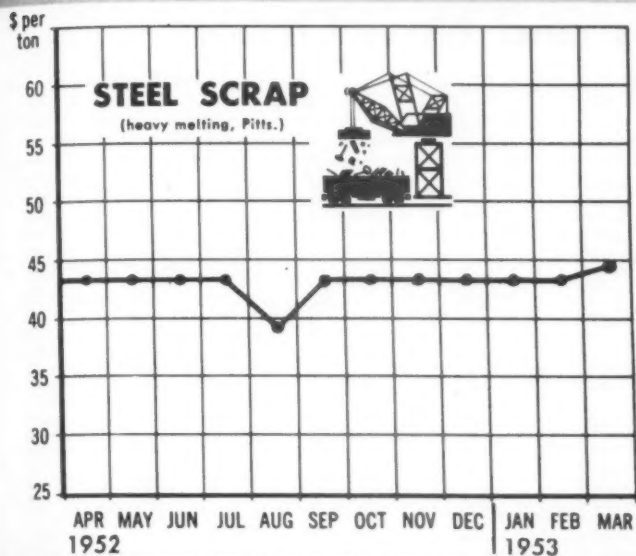
	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN	
					MONTH	YEAR
Stock Prices (Standard & Poor's)	1926=100	2 207.5	203.6	188.5	+ 1.9	+10.1
Bank Clearings (New York)	mil \$	8,457	6,280	8,759	+34.6	- 3.4
Federal Reserve Credit	mil \$	25,941	25,912	23,778	+ 0.1	+ 9.1
Currency in Circulation	mil \$	29,780	29,776	28,452	+ .01	+ 4.6

THE PULSE OF BUSINESS

Commodity Movements Mixed; Decontrol Effects Slight So Far

Decontrol is now complete, but to date its overall effect has been relatively slight on industrial commodity prices. Mixed movements are reflected in the charts on representative commodity prices below—four up, three down, and three unchanged. The most spectacular rise following decontrol was that in copper, which at this writing was being quoted by four different suppliers at from 27½ cents a pound to 34 cents a pound. Agricultural commodities generally have begun to show some strength. Despite selective rises, the total outlook continues to indicate no strong upward movement in the commodity level. Figures below are those prevailing on 15th of month.





THE PULSE OF BUSINESS

Sales, Inventories and New Orders

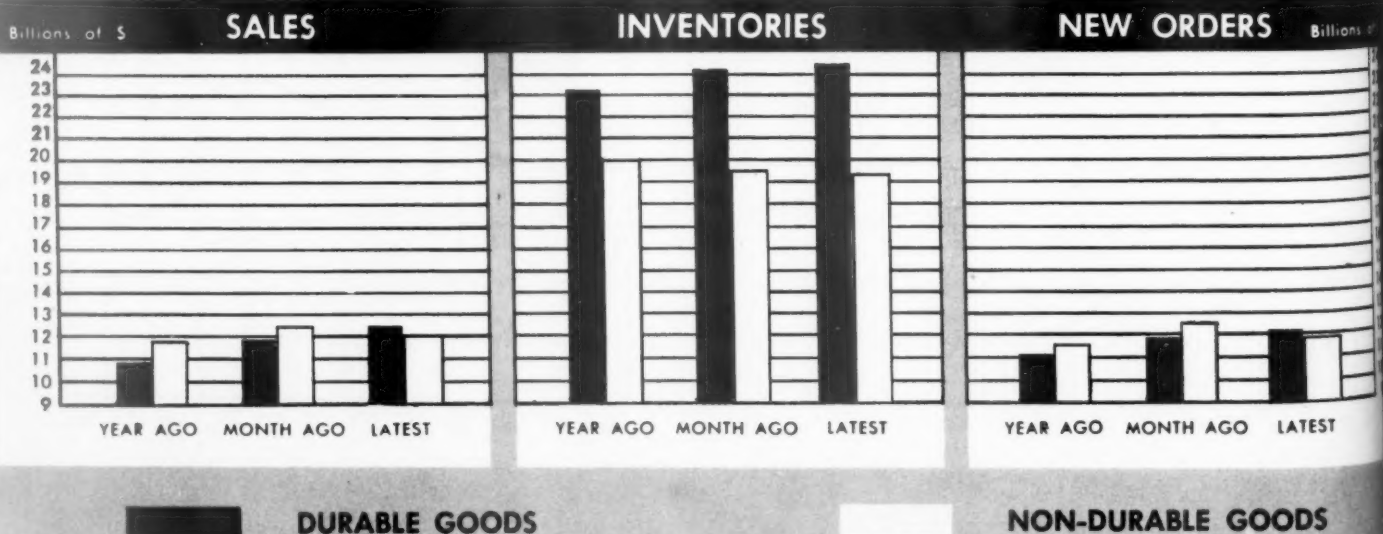
Value of Manufacturers' Sales	
Seasonally Adjusted	
(Millions of Dollars)	
All Manufacturing Industries	20,962
Durable goods industries	9,745
Primary metals	1,889
Fabricated metals	1,070
Electrical machinery	999
Machinery (except electrical)	1,863
Motor vehicles & equipment	1,295
Transportation equipment (exc. motor vehicles)	615
Furniture and fixtures	276
Lumber products (exc. furniture)	537
Stone, clay and glass products	425
Professional, scientific instruments	245
Other industries, incl. ordnance	531
Nondurable goods industries	11,217
Food and kindred products	3,116
Beverages	504
Tobacco products	281
Textile-mill products	1,122
Apparel	950
Leather and products	238
Paper and allied products	621
Printing and publishing	668
Chemicals and allied products	1,419
Petroleum and coal products	1,937
Rubber products	362

Book value of Manufacturers' Inventories	
Seasonally Adjusted	
(Millions of Dollars)	
All Manufacturing Industries	43,039
Durable goods industries	22,884
Primary metals	2,814
Fabricated metals	2,414
Electrical Machinery	2,927
Machinery (exc. electrical)	5,292
Motor vehicles & equipment	2,733
Transportation equipment (exc. motor vehicles)	1,950
Furniture and fixtures	549
Lumber products (exc. furniture)	1,069
Stone, clay and glass products	827
Professional, scientific instruments	757
Other industries, incl. ordnance	1,551
Nondurable goods industries	20,156
Food and kindred products	3,479
Beverages	1,233
Tobacco products	1,761
Textile-mill products	3,045
Apparel	1,816
Leather and products	613
Paper and allied products	986
Printing and publishing	795
Chemicals and allied products	2,984
Petroleum and coal products	2,600
Rubber products	843

Manufacturers' New Orders (Adjusted)	
All Manufacturing Industries	22,174
Durable goods industries	10,937
Nondurable goods industries	11,237

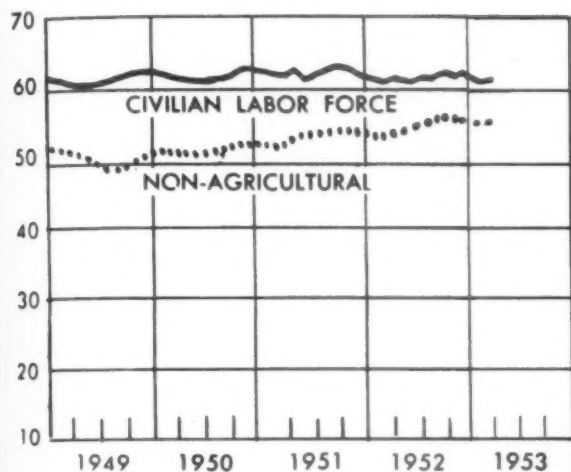
1951	1952				1953
December	January	October	November	December	January
20,962	22,364	24,753	23,465	24,276	24,338
9,745	10,861	11,968	11,676	11,913	12,374
1,889	1,964	2,198	2,100	2,048	2,099
1,070	1,240	1,263	1,177	1,287	1,433
999	1,064	1,205	1,238	1,259	1,207
1,863	2,050	2,068	2,060	2,053	2,107
1,295	1,647	1,842	1,826	1,920	2,187
615	645	812	923	819	844
276	264	410	362	362	336
537	614	678	596	727	717
425	496	553	518	497	502
245	284	277	255	310	287
531	592	663	623	629	654
11,217	11,773	12,785	11,789	12,363	11,964
3,116	3,161	3,452	3,191	3,293	3,089
504	499	513	457	545	500
281	318	327	309	344	293
1,122	1,143	1,188	1,084	1,151	1,138
950	997	1,281	1,143	1,260	1,197
238	252	265	234	288	269
621	714	734	663	682	738
668	760	720	678	691	677
1,419	1,523	1,660	1,532	1,558	1,631
1,937	1,938	2,181	2,059	2,174	1,994
362	468	464	438	438	n.a.
43,039	43,178	43,415	43,578	43,824	43,682
22,884	23,211	23,615	23,835	24,292	24,363
2,814	2,866	3,084	3,165	3,122	3,072
2,414	2,358	2,363	2,401	2,424	2,415
2,927	3,000	3,039	3,032	3,096	3,162
5,292	5,385	5,275	5,287	5,411	5,374
2,733	2,747	2,735	2,853	3,009	3,029
1,950	2,039	2,472	2,455	2,576	2,616
549	569	533	543	518	528
1,069	1,064	1,019	1,054	1,066	1,041
827	857	874	852	850	870
757	756	778	785	808	844
1,551	1,569	1,445	1,408	1,412	1,412
20,156	19,967	19,800	19,743	19,532	19,319
3,479	3,456	3,488	3,450	3,332	3,281
1,233	1,229	1,222	1,202	1,164	1,136
1,761	1,722	1,726	1,742	1,778	1,787
3,045	2,991	2,841	2,743	2,654	2,536
1,816	1,779	1,609	1,618	1,665	1,709
613	615	549	545	548	552
986	995	960	974	1,001	996
795	786	744	775	758	775
2,984	2,979	3,010	3,009	2,968	2,968
2,600	2,574	2,777	2,805	2,727	2,642
843	840	874	879	936	n.a.
22,174	22,721	24,472	22,788	24,386	23,972
10,937	11,142	11,772	11,134	11,930	12,113
11,237	11,579	12,700	11,654	12,456	11,859

*estimated p — preliminary n.a. — not available



Economic Indicators

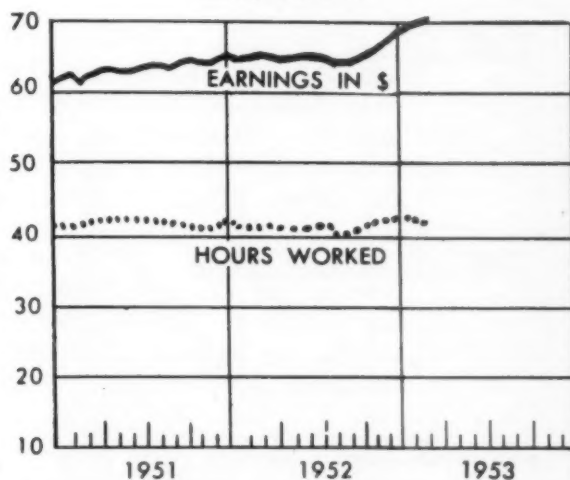
EMPLOYMENT
(in millions)



Source: Bureau of the Census

Total employment stayed over the 60 million mark, with a slight rise recorded in February. Unemployment is relatively low, at about 1.9 million.

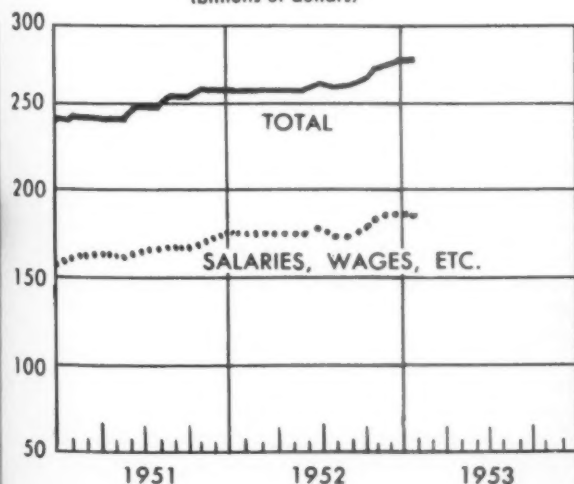
AVERAGE WEEKLY EARNINGS AND HOURS
MANUFACTURING



Source: U.S. Department of Labor

The average work week dropped somewhat more than was expected seasonally. The shorter work week brought a reduction in average weekly earnings.

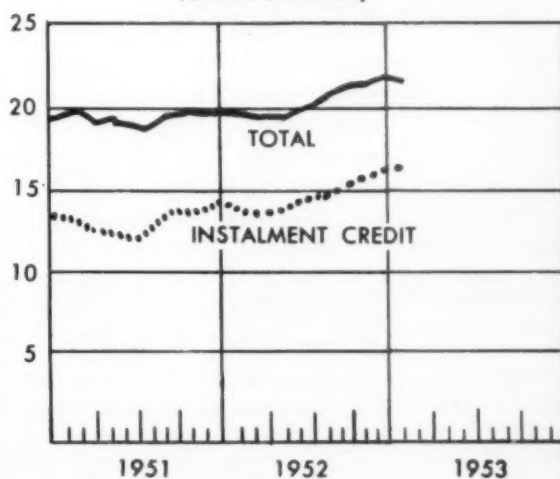
PERSONAL INCOME
(billions of dollars)



Source: U.S. Department of Commerce

Personal income rose slightly, but much below the rate of the past several months. Lower wages contributed to the slowing down.

CONSUMER CREDIT
(Billions of Dollars)



Source: Federal Reserve Board

Despite a small rise in instalment credit, total consumer credit dropped seasonally. It is still 3,608 million above a year ago.

Straws in the Trade Wind

PLANT OUTLAY TO RISE - Earlier estimates by the Department of Commerce and the Securities and Exchange Commission on how much business will spend on plant and equipment in 1953 have been revised upward - by about 5%. Now it appears that total outlay for the year will reach \$27 billion, a new record. Expenditures in 1952 were \$26.5 billion, and in 1951, \$25.5 billion.

STEEL PRODUCTION BOOMS - At this writing, steel production is rising toward the first 10-million-ton month in history in this or any country. Latest operating rate reported is 100.2 of capacity, equivalent to 2,259,000 tons of ingots and steel for castings for the entire industry.

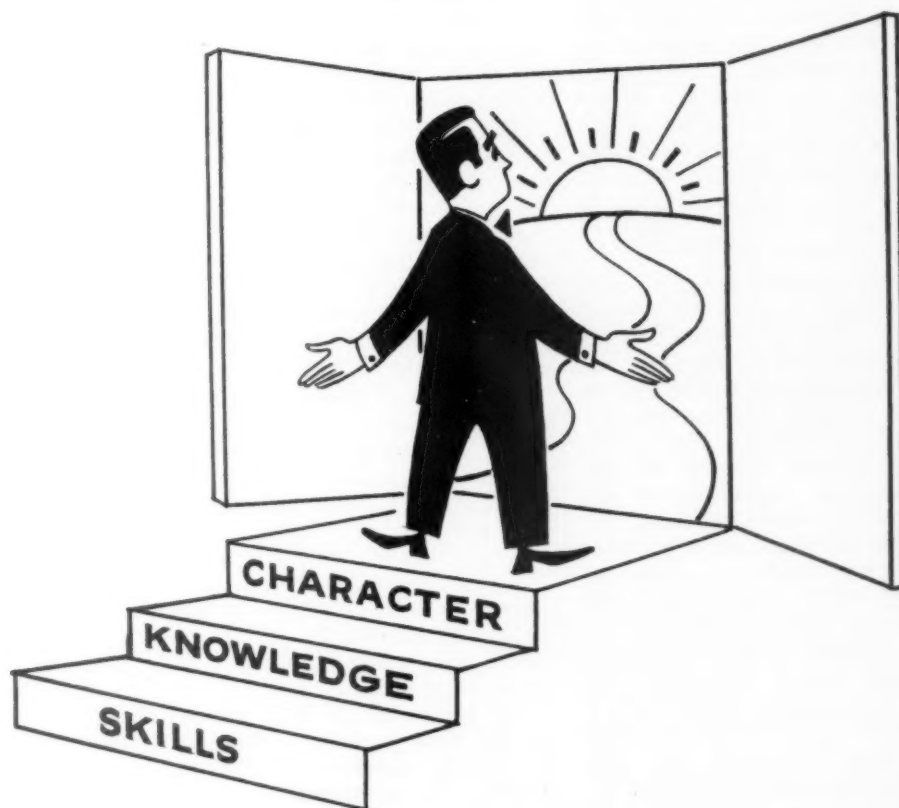
IRON ORE PRICE RAISED - Cleveland-Cliffs Iron Company, which operates one of the four largest Lake ore-carrier fleets, will charge 28 cents a ton more for iron ore during the second quarter of this year. A company official pointed out that if labor costs increase after July 1, it may be necessary to set a still higher rate.

TRADE GAP SHRINKS - Foreign countries spent about \$5 billion more in the United States in 1952 than they earned here, according to a recent study by the Department of Commerce. Foreign aid, private loans and investments, however, helped them to increase their reserves of gold and dollars by over \$1 billion.

CONSUMER CREDIT TOO HIGH? - The huge increase (700%) in instalment credit since World War II is part of a mounting load of private debts which is endangering our economy - that's the warning issued to a meeting of the American Savings and Loan Institute. Economist W.W. Townsend said that every American depression has been caused or accompanied by a collapsing "debt pyramid" - and this present "inverted pyramid of private debt might tumble over and do great damage."

AUTO MAKERS MERGE - The biggest automobile merger in history, and one that may change the Big Three to the Big Four, is scheduled to be completed in April. The Kaiser Manufacturing Corporation, a subsidiary of the Kaiser-Frazer Corporation, has purchased Willys-Overland Motors, Inc., for an estimated \$62.3 million, subject to approval by Willys-Overland common stockholders. The new subsidiary will continue to produce the old Willys-Overland line, including Jeeps, station wagons and Aero Willys passenger cars.

Broadened Horizons for Purchasing



By James M. Berry, Purchasing Agent, Vick Chemical Company, Greensboro, N. C.

A GREAT deal has been said and written about the importance of purchasing. It has been generally referred to—and rightly, I think—as a major function of manufacturing industry. That does not mean, however, that all purchasing agents are major executives.

Presidents and general managers of some of the largest corporations in the country have told local and national meetings of purchasing agents what they thought of purchasing, and what they expected of those responsible for the function in their own organizations. The purchasing agents, directors of purchases, or vice-presidents in charge

of purchasing, in such cases usually had authority and responsibility commensurate with the broadest concept of the purchasing function.

But after all, would any executive accept an invitation to address a group of men and show them the discourtesy of belittling either their jobs or their abilities? We must not be flattered nor misled. Top management in extending recognition demands commensurate performance of its purchasing personnel.

It requires little argument to convince anyone of the importance of spending half or more than half of a company's total income, but the extent of the authority of the pur-

chasing agent for spending it is another matter. The major function is there, but if his authority and responsibility are limited, the purchasing agent is not an executive.

The increasing recognition of purchasing as a major function of management has been achieved through the accomplishments of outstanding purchasing executives. The case histories of the more successful purchasing departments—and of course there is no reason to publicize the failures—would seem to indicate that authority and responsibility have been assigned in many cases more upon the basis of personalities than upon functional logic.

This explains the need for purchasing education, and why the National Association of Purchasing Agents and many top-flight purchasing executives emphasize and devote so much time and effort to the development of educational activities. Purchasing education seeks to encourage and help those engaged in purchasing to increase their knowledge and broaden their horizons. The end result, of course, is that they will do a better job of purchasing, fulfill top management's increasing demands, and finally enlarge further the importance of the purchasing function.

There are two dictionary definitions of the word "education" which I like. One is "the process or manner of training youth for their station in life"; the other, "the impartation or acquisition of knowledge, skill, or discipline of character."

The first definition seems particularly applicable to the formalized or classroom training in our schools and colleges. Purchasing has not been recognized long, but already is included in the management or business administration courses of over 200 colleges and universities. The long-range importance of this fact cannot be overemphasized, because from the graduates of the colleges and universities will come the executives of the future, directing all phases of economic activity.

Many of these courses developed from night classes organized and taught by purchasing agents, with a minimum of materials and facilities to help them do the job. The pioneering in purchasing education required a great deal of untiring effort by those associated with this work. Today, there are textbooks, course outlines, case material, a bibliography of literature, and manuals for principles, policies, and problem courses, but it was not always so.

The first comprehensive outline was developed by the National Committee on Education of the N.A.P.A. in 1930, primarily with vocational courses of the Y.M.C.A. type in mind. With the encouragement and assistance of Association leaders, the Committee on Education and other interested members of the N.A.P.A., Professor Howard T. Lewis wrote his "Principles and Practice" text and first conducted a purchasing course in the Graduate School of Business Administration at Harvard University in 1933, at the college level, and slanted to the top business executives of the future.

Within two years, there were recognized courses being conducted in night sessions at New York Uni-

versity, Marquette University, and the University of Cincinnati—probably elsewhere, also, but these examples come readily to mind—all instructed by purchasing agents. Progress since then has been rapid. Although much has been accomplished in the intervening years, there still are opportunities for introducing purchasing courses to the adult education programs of many educational institutions. Just this year, several new courses have been established at prominent colleges and universities under the sponsorship or with the encouragement of the Educational Committees of local Associations of Purchasing Agents.

The second dictionary definition of education—impartation or acquisition of knowledge, skill, or discipline of character—concerns directly those presently engaged in the purchasing profession. Education does not end with the classroom; it is a continuing and never-ending process. In the broader sense, no man is educated until he is dead.

The older and more experienced purchasing agents have the opportunity and the duty to impart skill and knowledge to their juniors and assistants, but it's a safe bet that they will at the same time acquire additional knowledge or discipline of character. Let's discuss the acquisition of skill, knowledge, and discipline of character, if I may be permitted to re-word the classical definition of education.

The acquisition of skill seems to be the most commonly understood and widely accepted phase of purchasing. To me it means a mastery of the mechanics and routine of buying, and perhaps worthy of little more attention in this discussion.

The acquisition of knowledge implies a much broader field. It suggests purchasing principles, and the study of the origin and development of materials, the economics of their procurement, and the characteristics and nature of their use.

The beauty of purchasing and its constant challenge to additional learning is the almost endless variety of problems arising in connection with day-to-day procurement of raw materials, processed commodities, and fabricated products. New materials, new uses, and new requirements create almost daily the circumstances requiring re-appraisal of values and the acquisition of additional knowledge.

Study and discussion of our own plant operations, visits to suppliers' plants and an active interest in their problems, association and interchange of ideas with other purchas-

ing agents, are obvious ways of increasing our knowledge of purchasing. The habit of seeking out and studying articles and references to purchasing principles, problems, and commodities also will pay real dividends.

Many men in purchasing today have had no experience in industry prior to the Roosevelt-Truman era of socialistic experimentation and controls. They need the advice and guidance of older and more experienced purchasing agents for a better perspective of the underlying economic forces. Attendance at purchasing agents' meetings and participation in constructive educational activities with those experiencing the same problems is one good way.

The various Development Committees of the National Committee on Education of the N.A.P.A. have released over the past few years a wealth of practical information and assistance for those seeking to broaden their knowledge of the field of purchasing. The Visual Aids programs, with carefully selected motion picture films illustrating manufacturing operations and purchasing relationships, can be substituted for plant visitations. The program guides covering the respective films provide discussion material, to enable bringing out factors and principles of most significance to the particular groups to which the films are being presented.

The "How To Buy" Development Committee has prepared studies covering such commodities as zinc, die castings, lead, and fire hose. These studies not only furnish information on "how to buy" the particular commodities discussed, but also suggest approaches to problems pertaining to other materials.

Other Development Committees have prepared manuals covering Intra-Company Training of Purchasing Personnel, Suggestions for a Purchasing Department Manual, and Improving Purchasing Reports to Management, all of interest and applicable for individual use but advantageous also for forum discussion meetings of purchasing agents. All publications of the N.A.P.A. National Committee on Education are available to colleges and universities for assistance in their academic courses and to interested member purchasing agents through the chairman of the local Association Educational Committees.

The third and final phase of our definition of education covers the acquisition of discipline of character. This is, as might be expected, the

(Please turn to page 360)

Analyzing Traffic Management

By Herman Limberg

THE value of the check list as a tool of management analysis has been amply demonstrated, and it is in regular use in many organizations, in respect to varied functions and operations. Being comprehensive and inclusive, and completely objective, it is effective not only in developing a factual picture of conditions as they are, but in locating points of weakness in existing conditions or practice and pointing out the corresponding opportunities for improvement.

Check list technique has long been the stock in trade of management consultants. It is not surprising, therefore, to find that it is coming into increasing use by management itself as the basis for a periodic "internal audit" of company practices. A more general—and perhaps most useful—field of application for this method is by the department head or manager who wishes to improve the performance of his department.

For most effective use, the check list should be prepared on a series of sheets having three parallel columns. The specific questions are listed in the left hand column, as shown in the specimen sheet illustrated herewith. The second and third columns are blank. In the second column, the analyst records his findings in respect to each question. This is a factual statement of things as they are. The third column is used for indicating the recommended action to correct or improve those conditions. This is the significant part of the

analysis, providing scope for the exercise of functional know-how and administrative skill.

This article presents a check list developed by the writer for conducting an audit of the traffic function, which is often a responsibility of the purchasing department. It is separately considered because it is a specific function, with many factors that are peculiar to itself, whether or not included in purchasing; if it is a part of over-all purchasing activities, it is nevertheless a particular phase which should be examined by itself. The relationship between purchasing and traffic is particularly significant in those cases where the purchaser pays the freight and is entitled to specify the carrier and routing.

Major divisions of the traffic check list are:

- I. Organization
- II. Types of Carriers
- III. Computation of Rates
- IV. Routing
- V. Incoming Shipments
- VI. Outgoing Shipments
- VII. Handling

Each of these divisions is prefaced by a brief statement of its significance. Before he begins his survey of traffic management, the analyst should review the check list and consider each question in relation to the particular project. Additions, deletions, or revisions should be made to adapt the check list to specific conditions and requirements.

I. ORGANIZATION

THE AUTHOR is Chief of the Training and Education Section, Division of Analysis, Bureau of the Budget, New York City, and is a lecturer at the City College School of Business and Civic Administration. A check list similar to the one here presented, covering the analysis of Purchasing Management, was published in our December 1951 issue.

Traffic functions are performed in all businesses irrespective of size. The organization required for the performance of these functions varies widely with the scope of duties involved, the nature and volume of business transacted, type and extent of distribution, etc. In every case, however, it is essential that authority and responsibility for the proper performance of these functions be clearly and definitely assigned.

1. Does the company maintain a separate Traffic Department?
2. If there is no separate Traffic Department, what is the extent of traffic operations, and by whom are they performed?
3. Have clear-cut authority and responsibility for traffic operations been assigned?
4. How is performance of personnel in charge of traffic operations measured?

II. TYPES OF CARRIERS

Proper selection of the types of carriers to be used is essential to insure:

- (a) lowest transportation cost;
 - (b) greatest speed of delivery;
 - (c) best care in handling;
 - (d) best service.
1. Has an analysis been made of the various types of carriers to ascertain those best suited to the company's requirements?
 2. What types of carriers are generally used:
 - a. Parcel post?
 - b. Rail freight?
 - c. Railway Express?
 - d. Motor freight?
 - e. Air Express?
 - f. Air freight?
 - g. Freight forwarders?
 - h. Water freight?
 3. Are the following factors con-

sidered in the selection of the type of carrier used?

- a. Cost of transportation?
 - b. Speed of delivery?
 - c. Service?
 - d. Care of freight?
4. Are periodic studies made of the various types of carriers to determine the possibility of improvement in operations through change of type of carrier used?

III. COMPUTATION OF RATES

Careful computation of shipping rates and costs is essential to insure shipment at the lowest possible transportation cost.

1. Are shipping rates computed in advance of shipping to ascertain lowest applicable rates? How?
2. Are shipping rates computed in connection with incoming shipments (purchases) on which the company pays transportation charges?
3. Are comparative rate charts prepared to show:
 - a. Relative cost of shipping (and receiving) different types of products?
 - b. Cost of shipping (and receiving) to (and from) specific geographical areas?
 - c. Cost of shipping (and receiving) by different types of carriers (e.g.: parcel post, rail freight, railway express, etc.)? (Attach samples of forms used.)
4. Have the proper freight classifications been determined for each of the company's products? Are

these reviewed and revised periodically for possible changes and revisions?

5. Have freight classifications been considered in the design, production, packing, and description of the company's products?
6. What sources of information are maintained for determination of classifications, rates, routings, etc.? Are these kept up to date?
7. How are freight bills audited? (By the company or by outside auditing specialists?)

IV. ROUTING

Proper routing of shipments will insure:

- (a) greatest possible speed in transportation;
- (b) lowest possible transportation costs;
- (c) best possible service.

1. What is the basis of selection of the particular carrier used? (e.g.: cost, speed of delivery, service,

care in handling, claims policy, etc.)

2. Does the company determine the routing desired and issue written routing instructions to the carrier?

V. INCOMING SHIPMENTS

Proper control of incoming shipments will insure:

- (a) receipt of goods as ordered, and in good condition;
 - (b) rejection of incorrect shipments;
 - (c) proper checking of vendors' invoices;
 - (d) receipt of goods when and as required;
 - (e) lowest transportation costs;
 - (f) economical and efficient handling.
1. Does the company issue packing, shipping, and routing instructions to suppliers? If so, what factors are included and how are such instructions issued?
 2. Describe the expediting and follow-up procedures used by the company. (Attach samples of forms used.)
 3. Describe the procedures used for:
 - a. identifying and accepting incoming shipments (including merchandise returns);
 - b. Examining packages and con-

tents as to condition and quantity;

- c. Recording and reporting on incoming shipments.

(Attach samples of forms used.)

4. What action is taken to correct or eliminate shippers' errors in shipping?
5. What disposition is made of incoming shipments by the Receiving Department?
6. What facilities have been provided for receiving and inspecting incoming shipments?

VI. OUTGOING SHIPMENTS

Proper control of outgoing shipments will insure satisfaction to customers as to:

- (a) speed of delivery;
- (b) receipt of merchandise in good condition;
- (c) proper packing for efficient handling;
- (d) lowest cost of shipment;
- (e) best possible service.

Proper control will insure to the shipper:

- (a) proper protection of goods in transit;
- (b) lowest possible cost of shipping;
- (c) greatest possible speed;
- (d) best possible service.

Proper packing is important to insure:

- (a) transportation and delivery of merchandise in good condition;
 - (b) control of cost of packing;
 - (c) shipment at lowest possible rates;
 - (d) economical and efficient handling.
1. What facilities have been provided for:

- a. Maintaining shipping supplies?
 - b. Packing, crating, weighing, and marking outgoing shipments?
2. How are packing requirements determined?
 3. Has a study been made of the various available types of packing materials for the purpose of determining those most effective and economical?
 4. Has the company set up specifications for packing materials?
 5. Have packing and shipping instructions been prepared and issued for the guidance of the shipping department?
 6. What procedures are used for checking the accuracy of outgoing shipments?
 7. Are outgoing shipments properly marked to insure delivery to consignee and necessary care in handling?
 8. How and by whom are bills of lading prepared? Are all essential data (including weight of shipment) shown on the bill of lading? (Attach sample of form used.)
 9. What procedure is used in expediting and tracing movement of freight, both incoming and outgoing? (Attach samples of forms used.)
 10. What procedure is used in filing claims against carriers? (Attach samples of forms used.)

VII. HANDLING

Proper handling of materials and products will insure:

- (a) reduction of packing, loading, receiving, unloading, and handling costs;
- (b) reduction in time required for manufacturing and other operations;
- (c) increased protection of materials and products, and reduction in losses from damage, breakage, etc.
- (d) increased safety and productivity of personnel.

A. Types of Handling Equipment

1. What types of handling equipment does the company use?
2. Are the following factors considered in the selection of equipment:
 - a. Specific need for equipment?
 - b. Simplest available equipment to meet need?
 - c. Standard vs. special equipment?
 - d. Initial cost and cost of operation and maintenance?
 - e. Savings to be effected through reduction in handling costs?
 - f. Available labor for operation of equipment?
 - g. Nature of plant layout, available space, aisles, etc.?

CHECK LIST FOR ANALYZING MANAGEMENT OF TRAFFIC		
Analysis	Findings	Recommended Action
<p>I. ORGANIZATION</p> <p>Traffic functions are performed in all businesses irrespective of size. The organization required for the performance of these functions varies widely with the scope of duties involved, the nature and volume of business transacted, type and extent of distribution, etc. In every case, however, it is essential that authority and responsibility for the proper performance of these functions be clearly and definitely assigned.</p> <ol style="list-style-type: none"> 1. Does the company maintain a separate Traffic Department? 2. If there is no separate Traffic Department, what is the extent of traffic operations, and by whom are they performed? 3. Have clear-cut authority and responsibility for traffic operations been assigned? 4. How is performance of personnel in charge of traffic operations measured? 		

Specimen sheet of check list analysis form

B. Receiving and Storage

1. Are incoming materials received in unit packages suitable for mechanized handling?
2. Are they unloaded and delivered to the storeroom without manual handling?
3. Are they stored to the ceiling without manual handling?

C. Packing and Shipping

1. Are finished products stored to ceilings without manual handling?
2. Are outgoing shipments packed in unit loads suitable for mechanized handling?
3. Are outgoing shipments loaded on carriers without manual handling?

D. Costs

1. How many men are engaged in handling materials full time? Part time? Can this number be reduced? If so, how?
2. Is any skilled labor ever required to do ordinary handling work? If so, why is this necessary? Can it be avoided? If so, how?
3. What proportion of direct labor payroll is represented by handling?

ding? Can this be reduced? If so, how?

4. What is the cost of defective material and spoiled work resulting from present handling methods? Can this be reduced? If so, how?
5. What is the cost of lost time resulting from present handling methods? Can this be reduced? If so, how?
6. Can present compensation rates be reduced by elimination of injuries resulting from handling?
7. What proportion of lost time accidents result from present handling methods? Can this be reduced? If so, how?

E. Handling Systems

1. If handling has been mechanized, are the systems in use in each case best adapted for the work?
2. Are the handling systems reviewed periodically for replacement of obsolete equipment and methods to effect possible increase in efficiency and reduction in costs?
3. Are customers informed that shipments will be made in unit packages on request wherever practical?

Two Time-Saving Calculator Charts

By Louis J. Murphy, M.E.

ROUTINE calculations are from time to time, a part of every purchasing job—one of the necessary evils. They consume large amounts of time and energy. The possibility of error is ever present in following through a complicated formula, with successive stages of multiplication and division.

Experience shows that devices which simplify calculations not only save time; they also reduce errors and the confusion that results from incorrect orders or requests.

One form of calculating device that is widely used for many types of problems is a chart that sets up the various factors involved as a series of parallel scales, properly calibrated and spaced so that the relationship between any given set of values on the various scales can be determined by the intersections of lines connecting the indicated values, giving a direct reading of the desired answer.

Two such charts are reproduced on the opposite page. They were developed for use in a large purchasing department where these particular problems arose repeatedly, and they have proved to be excellent tools for saving time, energy, and tempers. The chances are that the same questions must be answered in your own purchasing program. If so, here's how you can use these charts to simplify and speed the task of calculation.

Best Ordering Quantity

Chart I correlates four factors every purchasing agent must consider in order to determine the most economical number of units to purchase to supply a production line. It takes into consideration: (1) the

number of units used per year, or per "run"; (2) the percentage of carrying cost; (3) the set-up or handling cost; and (4) unit price. In addition to these lines on the chart, there are two unscaled lines used as reference points, and a fifth scale on which the answer is read. It is used as follows:

Example: A manufacturing plant uses 10,000 carbon piston rings per year. They cost 20 cents each. Carrying cost in this company is 6% (0.06), and there is a handling cost of \$5 per order. What is the most economical quantity of these rings to purchase at any one time?

Solution: Enter the chart at the point "10" on the first scale, indicating the quantity of 10,000 units. (The scale works just as well in units, hundreds, or millions, as it does for thousands. Just remember that your answer will come out in terms of those quantities. In this particular problem, thousands are the multiple involved.)

From this point, draw a straight line (A) through the handling cost of \$5 on the second graduated scale.

From the point where this line intersects the first reference line draw another straight line (B) through the carrying cost of 0.06.

From the point where line (B) intersects the second reference line, draw another straight line (C) through .2 (twenty cents) on the unit cost scale.

Line (C) intersects the center scale (most economical quantity to buy) just above "2". Therefore, since we are dealing in the multiple of thousands, read the most economical quantity to buy as 2,100.

The same chart can be used to determine the most economical

quantity to manufacture, simply by using the set-up cost instead of handling cost on the second scale.

Solve a few typical examples on this graphic calculator, and you will find that it gives results far quicker than a slide rule or machine because it eliminates tedious division and square root functions.

Cost of Structural Steel

Chart II was developed to determine the cost of structural steel for new plant buildings or extensions. The purchasing agent was frequently asked for cost approximations and comparisons. Results by this method are surprisingly accurate, and a number of other applications have been found where two successive stages of multiplication are involved.

Example: A new mill building uses 10 lbs. of steel per square foot of floor area. What is the total cost of this steel if finished materials run about 20 cents a pound and the building area is 8,000 square feet?

Solution: Enter the chart at 10 (pounds per square foot) on the first scale and draw a straight line (1) through the plant area of 8,000 square feet. From the intersection of this line on the ungraduated reference scale, draw another straight line (2) through the steel cost .2 (dollars per pound). Your answer—16 on the center scale—is \$16,000.

Of course you could have arrived at this answer on a slide rule or calculating machine. The chart is an excellent method of checking machine results. Remember, computing machines give accurate results only when fed the proper data. The chart acts as a check to see that you have done just this.

CHART 1.

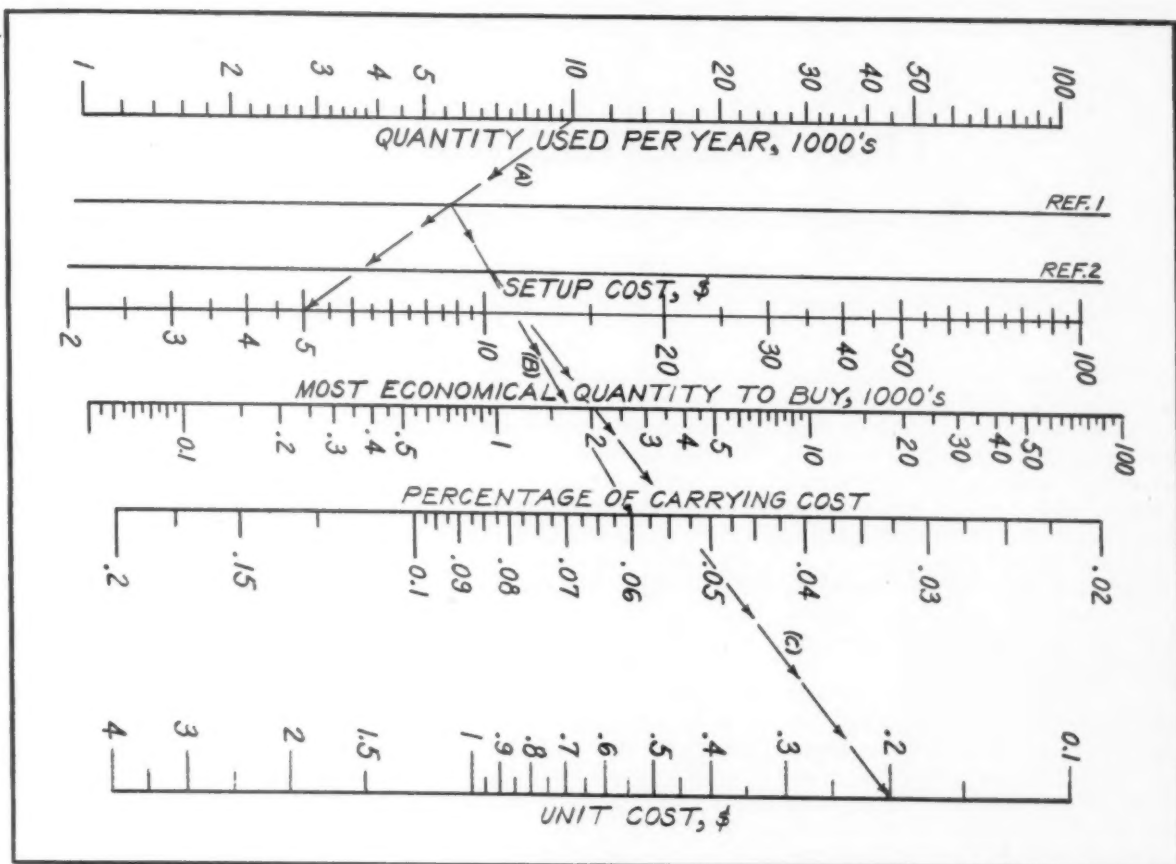
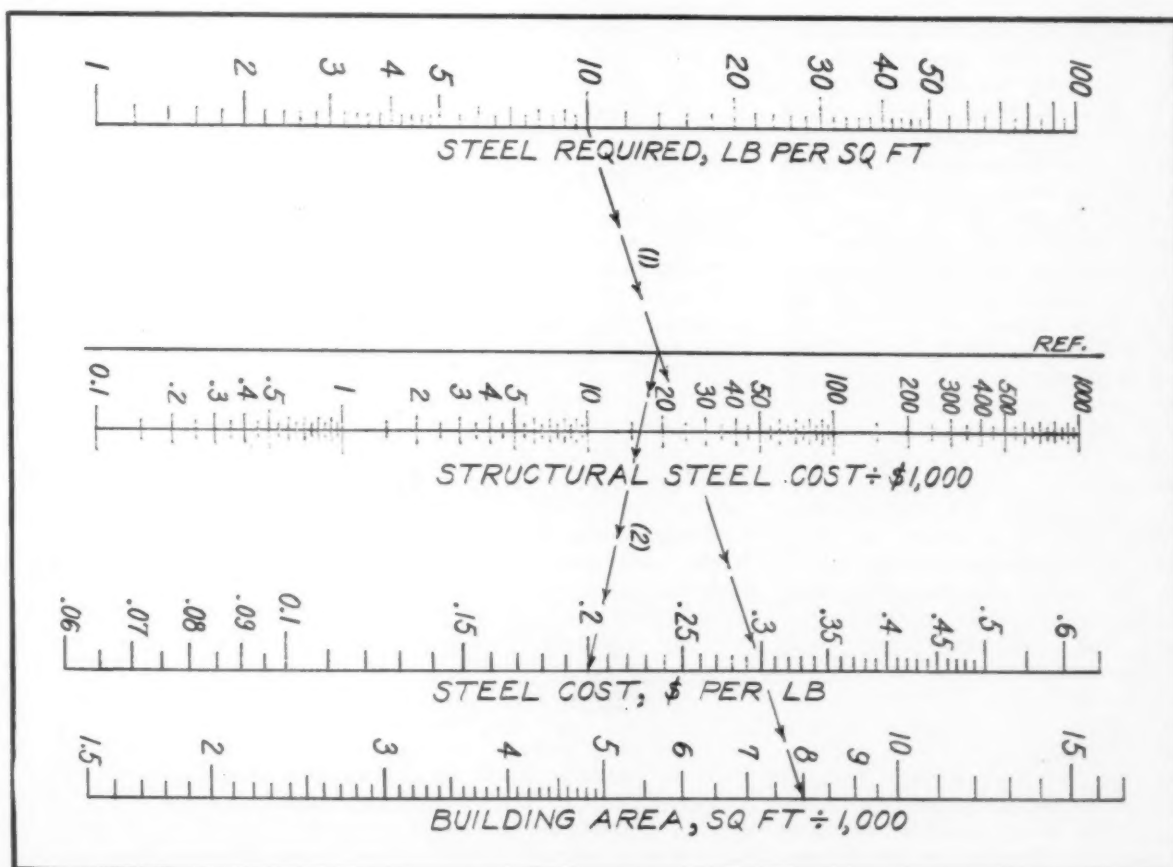


CHART 2.



The Purchase of Advertising

By George J. Abrams, Advertising Manager, Block Drug Company, Jersey City, N. J.

Last year American business men purchased six billion dollars worth of advertising. This figure represents primarily media and direct mail expenditures—the buying of space and time in newspapers, magazines, radio, television, mailing pieces, and display material.

Additional millions were spent in the purchase of production necessities such as engravings, artwork, and typography.

All of which adds up to the fact that advertising is not only big business but a purchasing business as well. Purchasing men, therefore, will find it interesting to observe the differences in purchasing procedure in the advertising function as contrasted with the more familiar methods of purchasing materials and materiel for the manufacturing operation.

While most purchasing managers buy directly from suppliers and deal regularly with the suppliers' salesmen, the advertising manager makes most of his purchases at "second hand." Like the purchasing manager, he sees salesmen every day; but unlike the purchasing agent, he rarely "signs on the dotted line."

For standing between the supplier and the advertising manager is the advertising agent, who serves the dual role of counselling the purchase and of physically placing the order. This procedure, normal in the purchase of space and time, varies greatly in other advertising purchasing.

In the creation of a magazine advertisement, for example, the purchase of photography is often essential. Yet rarely does the advertising manager make such purchases. Instead, the advertising agency will arrange for selection of the photographic studio, supervision of the photography and purchase of the desired photographs (after reviewing the photographs with the ad manager). Similarly, the purchase of artwork from outside art services is generally handled by the adver-

tising manager given the prerogative of accepting, revising, or rejecting the illustrations. Even this privilege is often denied the advertising manager when the artwork is inexpensive or routine in design.

This purchasing procedure, on the other hand, is often reversed when displays are bought. Here the advertising manager, dealing directly with the suppliers' representative will creatively develop the display and place the purchase order with the salesmen. In most companies the order for the display material is placed through the purchasing agent, and this procedure often creates a problem.

For the purchasing agent is accustomed to securing competitive quotations, while the creative element in the development of displays makes this procedure difficult. Unless the display is of a general category, the advertising manager and the display manufacturer will wish to protect the design from competitive eyes. Moreover, should another display company quote on the display and present a lower price, legal questions may restrict acceptance of the more favorable bid.

In the purchasing of direct mail, however, the procedure again changes. The advertising agency commonly prepares the copy and artwork for the mailing piece and submits the layout to the advertising manager for approval. Upon acceptance by the ad manager, the actual purchase of the printed piece can be handled by either the advertising agency or the advertiser. If the advertising manager supervises the purchasing of the printed direct mail piece, he may simply turn the copy and artwork over to his purchasing agent with instructions to "get a good job at the best possible price." On the other hand, the advertising manager may prefer to deal regularly with the same printer whom he knows will not only do a creditable, economical job but will also improve the mail piece

creatively with constructive suggestions.

The purchase of space and time, however, is easily the greatest dollar volume item bought by the advertiser. And purchased without the services of the purchasing agent!

The reasons for exclusion of the company's "buying expert" soon become obvious. In the first place, almost all advertising rates are standard and published. The advertiser and his agent either refer to *Standard Rate & Data* or to the rate card of the medium desired, and the price to be paid for space or time is quickly determined.

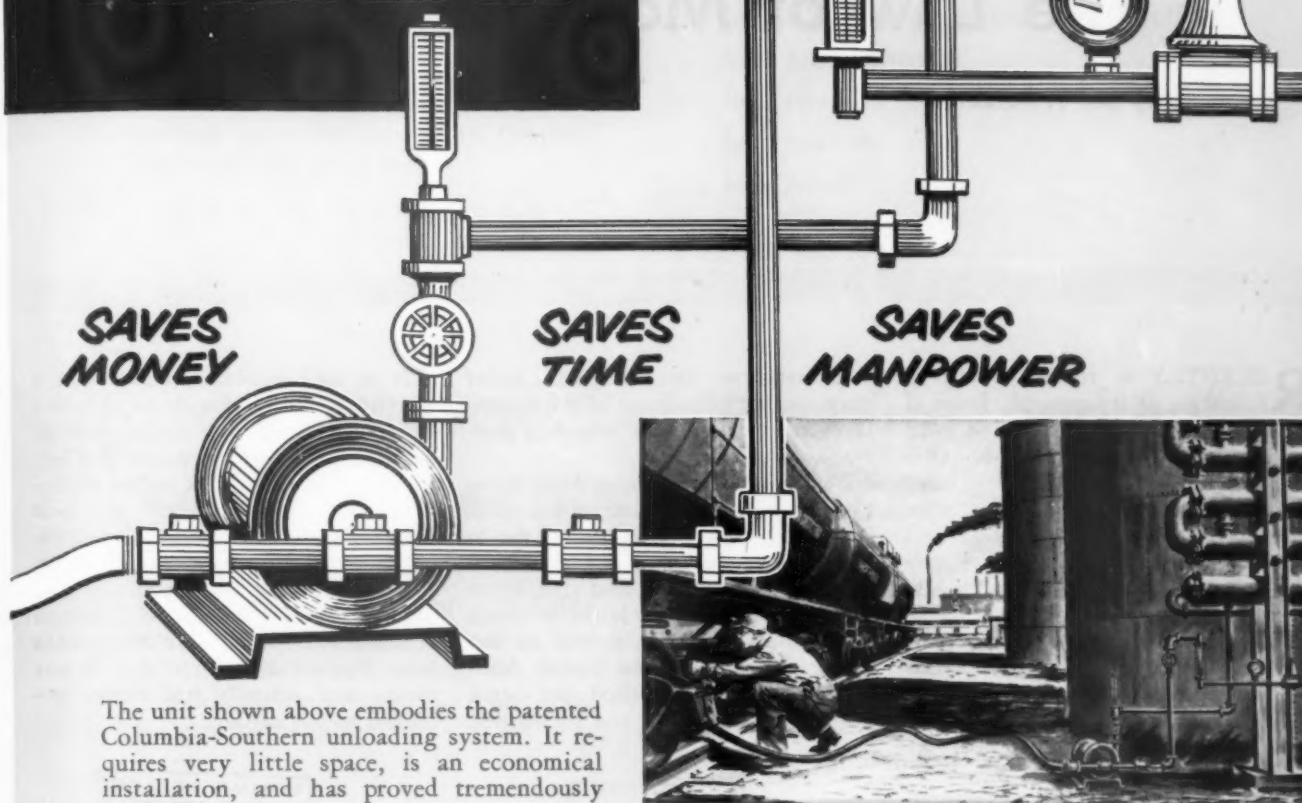
If a radio or television program is to be purchased, the advertiser and his agency will generally negotiate with the network or local station. Such negotiations often entail discussions involving rehearsals, scripts, announcers, union rates for rebroadcasts, etc., so that the average purchasing agent would soon find himself at sea in a flurry of advertising terminology and advertising practice.

In one phase of the advertising operation, however, purchasing manager and advertising manager generally work together as a team with effective results. This is in the design and development of packaging.

If the advertising manager has been assigned the task of designing or redesigning the company's packaging, he will find it advantageous and desirable to cooperate with the purchasing agent, who has had the necessary production background to guide the ad man in his package creation.

But it is only through an understanding of each other's functions that advertising manager and purchasing manager can effectively work together. There is always a tendency for department heads to zealously guard the functions for which they are held responsible, but where each recognizes the overlapping necessities of their respective jobs harmony is the rule rather than the exception.

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The Law of Mortgages vs. Liens

By Leo T. Parker

RECENTLY a reader wrote as follows: "For several years I have been a constant reader of your legal writings in **PURCHASING**. One subject which it appears you have neglected in the past is validity of mortgages, conditional contracts, and liens on equipment which the purchaser moves from place to place. Also, assume that a purchaser gives a seller a worthless bank check in payment for a movable chattel, can the seller recover possession of the chattel from the present possessor who purchased it from the payor of the worthless check?"

The writer has made a careful review of late and leading higher court decisions on these various subjects of law, and this article has been prepared to share the desired information with all readers.

First, it is important to realize that there is considerable legal difference between laws relating to movable and immovable chattels. I shall endeavor to point out these legal differences by selecting higher court decisions which relate exclusively to chattels movable from place to place.

Legal Status of Worthless Check

Modern higher courts consistently hold that if the original seller of a movable chattel gives a valid and fully executed certificate of title to the purchaser of the chattel, who pays with a worthless check, such seller has no recourse against one who in good faith later buys the chattel from the purchaser. On the other hand, if the seller does not give the original purchaser good and valid certificate of title to the person who made the purchase, with a worthless check, then under these

circumstances the original seller may recover possession of the chattel from the person who now has possession.

For instance, in *Island Auto Sales Company v. Bullington*, 50 So. (2d) 91, it was shown one Cole sought to purchase an automobile from Island Auto Sales Company, and after some negotiation gave the latter a check in the sum of \$2,250, drawn on the Twin City Bank. The Island Auto Sales Company attached the legal title to the check and forwarded

It is well established law that a purchaser never receives a better title to merchandise or equipment than possessed by the seller. For example, if a seller sells stolen equipment the purchaser has no good title because the seller held no title.

For example, in *Forrest v. Watts*, 47 So. (2d) 112, it was shown that one Forrest purchased certain equipment from a dealer. Six months later Forrest discovered that it was stolen and actually had never belonged to the dealer.



**DON'T GIVE A CERTIFICATE OF TITLE TO BUYER UNTIL YOU
KNOW HIS CHECK IS GOOD**

it to the bank for collection. Payment was refused by the bank and the dishonored check, together with the title papers, were returned to the Island Auto Sales Company. In the meantime Cole sold the automobile to a third innocent party.

In subsequent litigation the higher court held that the Island Auto Sales Company could recover possession of the automobile from this third innocent party.

In subsequent litigation the higher court held that the dealer must pay to Forrest the original purchase price of the equipment, \$1,445, plus financing charges of \$281.25. The court said:

"While it is true that the sum of \$281.25 would have been eliminated from the sale, if the sale was a cash sale, we hold that even though this finance carrying charge is not properly considered as a part of the pur-

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chase price, plaintiff (Forrest) is still entitled to recover this amount as an item of damage which he has sustained as a result of his purchase."

The same law is applicable to a seller who gives a purchaser a forged bill of sale or worthless certificate of title.

Mortgage Lien Is Forfeited

Considerable discussion has arisen from time to time over the legal question: "If a bank or finance company finances a sale and takes a mortgage to secure its loan, is the mortgage valid and collectable al-

or right to sell merchandise unless he receives it legally.

For illustration, in *State v. Hast*, 41 N. W. (2d) 305, the testimony showed facts, as follows: One Hast is a licensed fur buyer in business for himself. One Olson is a licensed fur buyer employed by the Grand Forks Hide and Fur Company. Early one morning Hast called at Olson's home and inquired if Olson would be interested in buying muskrat hides. He stated that he did not have the hides but that he knew where he could get some. That evening Hast and Olson met. Hast had with him some two thousand

were from animals taken out of the lawful open season."

According to a recent higher court, a sheriff may be personally liable in damages if he unlawfully levies upon and takes possession of merchandise.

Sheriff Liable For Wrongful Levy

For example, in *Foster v. Howell*, 220 Pac. (2d) 717, it was shown that one Howell purchased an automobile from one Kelly, who owed money due on the car to a finance company. Howell held the certificate of title in his own name, and also the certificate of license bore the same license number as was on the car. Howell paid the sales tax to the city and county and then loaned the car to Kelly. Since Kelly was delinquent on payments, the finance company secured a judgment against Kelly who had the car in his possession. Then the finance company directed the sheriff of the county to levy upon and take possession of the automobile which was in possession of Kelly. The sheriff found Kelly in possession of the automobile. He made no objection to the seizure, and volunteered to drive the car to a garage for storage under the direction of the sheriff.

Later Kelly sued the finance company and the sheriff for \$7,000 for loss of the car and loss of profits from the use thereof.

In holding in favor of Kelly, the court said:

"The automobile could have been loaned or hired to the vendor (Kelly) without rendering it subject to levy. It would be a harsh and unreasonable construction of the statute to say that the automobile must be kept completely away from and out of the hands of the vendor."

Dealer Convicted of Theft

According to a recent higher court embezzlement is the "fraudulent" appropriation of property by a person to whom it has been entrusted.

For example, in *People v. Frazier*, 198 Pac. (2d) 325, it was shown that the owner (named People) of merchandise took it to a dealer and told him to sell it, keeping a named commission on the sale. The dealer sold the merchandise to one Willis for \$2,725. In a day or so the dealer phoned People and told him he had a buyer and he could obtain \$2,200, and after deducting expenses of \$300, including his commission, a net of \$1,900 would remain for People. The latter agreed to accept that amount. The dealer then gave



ILLEGAL MERCHANDISE CAN NEVER BE MADE THE BASIS OF A VALID CONTRACT

though the equipment is confiscated by Federal, state, county or city authorities?" The answer is *no* if the holder of the mortgage fails to prove that before making the loan it thoroughly investigated the moral responsibility and reputation of the purchaser.

For example, in 219 Pac. (2d) 839, it was shown that one Willis purchased an automobile and financed it through a bank. Soon afterward the automobile was seized by the Division of Narcotic Enforcement while it was being used for the transportation of marijuana.

In subsequent litigation the higher court held the bank's mortgage lien void because before it loaned the money to Willis to finance the car it failed to investigate the past reputation of Willis. The court said:

"The bank failed to allege or prove at the trial facts which would have protected its lien, namely, that its mortgage interest was acquired after a reasonable investigation of the moral responsibility, character and reputation of the purchaser."

According to a recent higher court no person can acquire legal title to

muskrat hides. After bargaining they agreed upon an average price of \$1.15 each for the hides. Hast demanded Olson's personal check in payment rather than a draft upon Olson's employer. Olson gave Hast his check for \$2,576.

A few days later Olson delivered the hides to his employer, the Grand Forks Hide and Fur Company, which refused to accept them for the reason that they were summer or early fall furs, and therefore had been taken or trapped in violation of the state game laws.

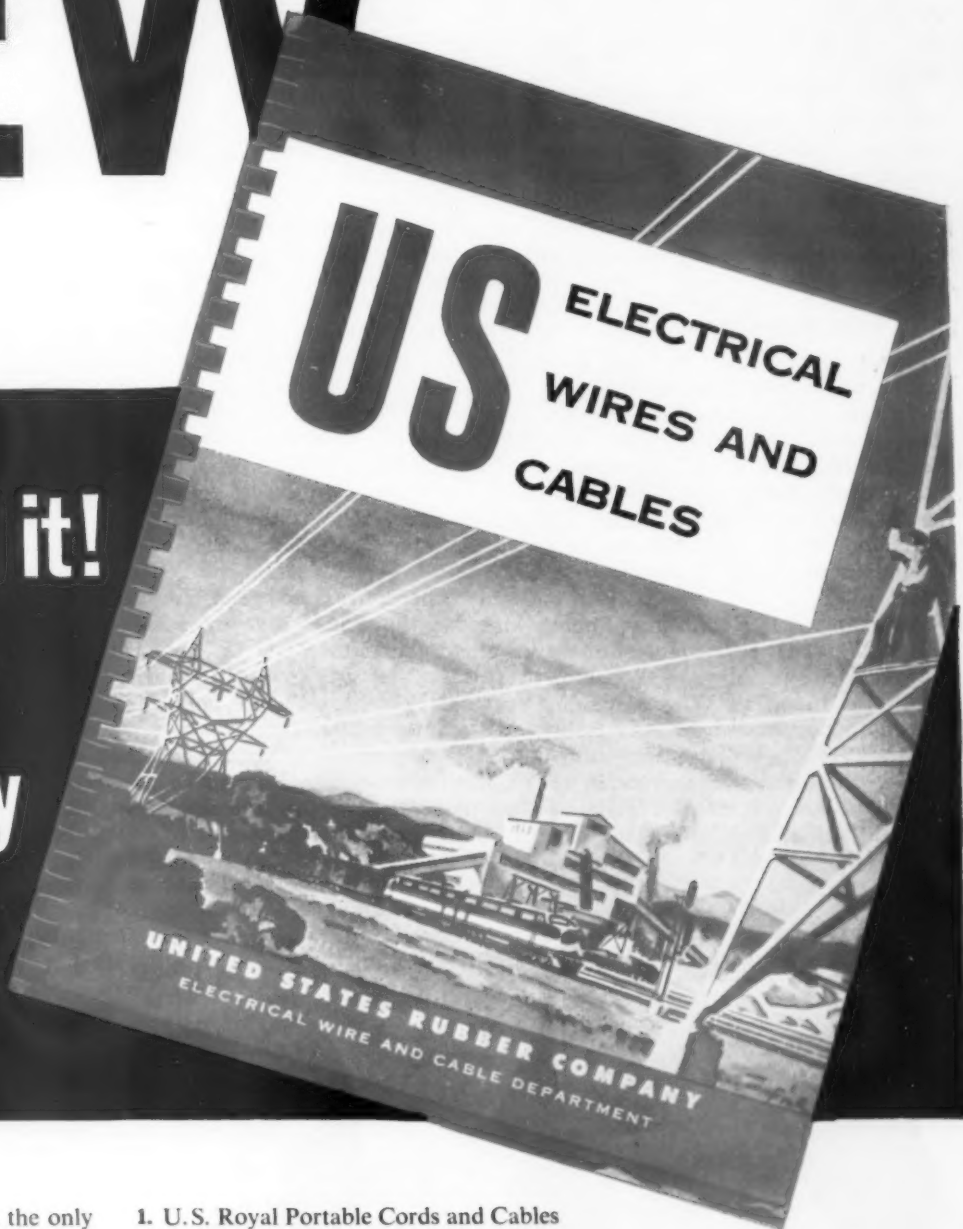
Olson filed a charge against Hast of obtaining money by false pretenses, by cashing the check for \$2,576.

The higher court convicted Hast of obtaining money under false pretenses, and said:

"No person can acquire title to, or the right to sell the pelts of any animals, protected by the state game laws, unless such pelts are those of animals taken in a lawful manner and in open season. . . . The evidence in this case is sufficient to sustain the jury's finding that the muskrat pelts sold by the defendant (Hast)

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121

People \$1,900. Later People learned that the dealer had sold the merchandise for \$2,725 and sued the dealer for \$440 and charged him with theft and embezzlement.

The higher court convicted the dealer of embezzlement and ordered him to pay People \$440. The court said:

"Every person entrusted with property and who fraudulently appropriates it to any use or purpose not in the due and lawful execution of his trust, or who secretes it with a fraudulent intent to appropriate it to such use or purpose, is guilty of embezzlement."

Must Have Good Title

A late higher court decision held that if an automobile dealer sells and delivers an automobile to a purchaser who gives a worthless check for the purchase price, the dealer may recover possession of the automobile from one who purchased the automobile from the purchaser, and did not receive a valid certificate of title.

For example, in *Robinson v. Poole*, 232 S. W. (2d) 807, the testimony showed facts as follows: A person giving his name as Wayne Nelson offered to purchase from one Robinson a 1946 Chevrolet Sedan automobile. Robinson was the owner of the sedan, but was not a registered dealer in automobiles. Robinson delivered the automobile to Nelson

to Nelson. The same day Nelson went to the used car lot operated by one Poole and offered to sell the automobile for \$1,100.00. Mr. Poole demanded to see Nelson's title and asked for an explanation of the fact that it was dated that day. Nelson gave a satisfactory answer to Poole, and Poole purchased the car, paying Nelson cash. Nelson then delivered to Poole the automobile and the certificate of title which he had obtained from Robinson. Nelson also executed a bill of sale to Poole and agreed that later he would return and execute the assignment on the new certificate that was to be issued in his name.

The following day Poole made application to the Motor Vehicle Division for a certificate of title in the name of Wayne Nelson and on the next day a certificate of title to Wayne Nelson was issued by the state. Nelson never did return to execute the certificate and assignment to the Poole Motor Company.

When Robinson learned that Nelson's check was no good, he demanded that Poole give up possession of the automobile to him. On refusal a suit was filed by Robinson against Poole to recover possession of the automobile.

It is important to know that the higher court ordered Poole to give up possession of the automobile to Robinson and said:

"It is conceded that defendant

that the alleged sale to defendant (Poole) was fraudulent and void."

For comparison see *Arnold-Strong Motor Company*, 88 S. W. (2d) 419. Here the higher court held that the buyer of a motor vehicle acquires no title unless a certificate of title is assigned and passed to him at the time of or soon after the delivery of the motor vehicle.

For further comparison see *Lawin v. Pepe*, 43 N. W. (2d) 804. The testimony showed facts as follows: One Delaney owned an automobile. He gave a salesman, named Gilson, possession of his automobile and also the registration card which bore the notarized signature of Delaney. Gilson, the salesman, sold the automobile to one Earl who financed the sale price of \$2,000 through a money lender named Lawin, who took a conditional sales contract consisting of an original white copy and a pink duplicate, both being filled in to show that the due money payments were to be made to Lawin. Earl, the purchaser of the car, signed both copies as the purchaser, and Gilson signed his name to the original white copy of the sales contract as the seller. Actually Delaney was the seller. Later Earl took the car and Delaney's registration card to the Citizens Loan and Investment Company and obtained another loan of \$2,110. In obtaining this loan Earl showed the registration card showing that the car had been transferred by Delaney.

In subsequent litigation the higher court held that the Citizens Loan and Investment Company held a valid lien on the car and Lawin's lien was absolutely invalid, because Lawin's lien stated that Gilson was the seller, when in fact, Delaney was the seller and Gilson was the salesman. The court said:

"We still cannot overlook the fact that, as completed, the instrument expressly designated Gilson as the seller. In other words, by its express terms it gave record notice that a certain person other than the plaintiff was the actual seller."



MISAPPROPRIATING THE PROCEEDS FROM PROPERTY HELD IN TRUST CONSTITUTES EMBEZZLEMENT

and Nelson gave Robinson a check for the purchase price of the automobile in the sum of \$1,575. This check eventually proved to be of no value for the reason that Nelson had no account in the bank on which the check was drawn.

At the time of the purchase, Robinson executed on the certificate of title of the automobile an assignment

(Poole) did not receive any certificate of title assigned by Nelson. From this admitted fact it necessarily follows that defendant (Poole) had no right or title to the automobile and, therefore, as between himself and Nelson did not become 'an innocent purchaser for value' and Poole never did receive a certificate of title to the car in issue. It follows

Mechanic's Lien vs. Chattel Mortgage

The higher courts hold that a valid mechanic's lien cannot be filed against personal property, since such a lien is applicable solely to real property. However, according to a late higher court decision, a mechanic's lien is valid against personal property attached permanently to real property. Also, a mechanic's lien has priority over an older chattel mortgage.

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For example, in *Stapp v. Carb-Ice Corporation*, 224 Pac. (2d) 933, the testimony showed facts as follows: The Stapp Engineering Company entered into a contract with the Carb-Ice Corporation "to design, build and construct a plant to produce liquid and solid carbon dioxide using boiler flue gases as a source of the basic material." The plant was constructed on real estate owned by the Colorado Ice and Cold Storage Company, upon which property the Carb-Ice Corporation had a twenty-year lease.

After the work was completed, the engineering company sued Carb-Ice for an alleged balance due claiming that the total cost of materials furnished and labor performed was \$278,435.16 and the Carb-Ice had paid only \$263,684.57, thus leaving a balance due of \$14,750.59 plus interest.

The engineering company filed a mechanic's lien against the plant and real property of the Carb-Ice Corporation to secure payment of said \$14,750.59. This property included the machinery installed in the plant.

The testimony showed that a bank had loaned money on the machinery and equipment and held a chattel mortgage on the machinery and equipment to secure payment of its loan. The officials of the bank contended that its chattel mortgage was prior to the mechanic's lien, first, because it was recorded before the mechanic's lien was filed and, second, a mechanic's lien is not valid on personal property.

It is interesting to note that the higher court held that the machinery and equipment automatically became real property when it was attached to the real property, and further that the mechanic's lien has priority over the chattel mortgage, although the latter was recorded before the lien was filed. The higher court said:

"We must assume the truth of the statements which disclose that the contract entered into by Carb-Ice was to 'design, build and construct a plant' and that the items included in the chattel mortgage running to the First National Bank of Denver were a necessary part of the plant and machinery required for the successful operation of the whole plant. Items of personal property may become subject to a mechanic's lien by becoming fixtures."

Mortgage vs. Lien

Considerable discussion has arisen from time to time over the legal question: "If a garageman performs

services on a mortgaged automobile, which lien is superior—the garage owner's lien or the mortgage?"

According to a recent higher court, where one is engaged in the automobile repair business and furnishes labor and material in the repair of an automobile for any person, a lien is created subject to all prior liens.

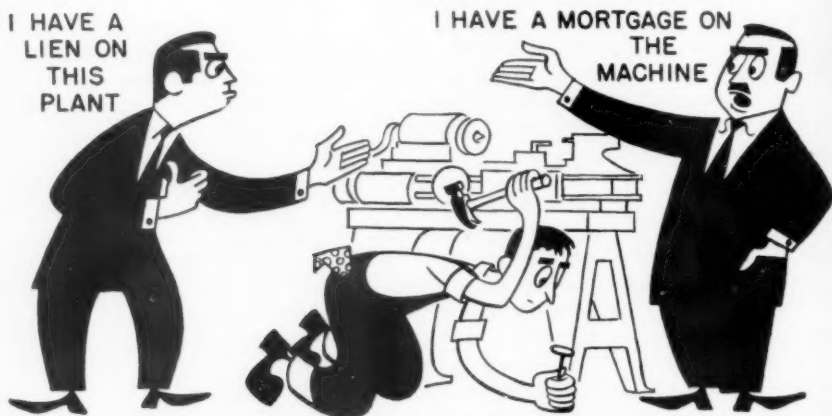
For illustration, in *United v. Maxwell*, 215 Pac. (2d) 541, the testimony showed facts, as follows: One Egan gave a chattel mortgage on his automobile to Risner's Cars, which mortgage was assigned to a finance company. The mortgage and assignment were properly recorded. Thereafter, the automobile was damaged in a wreck. At the request of the owner, Egan, one Maxwell towed the wrecked automobile to his garage and stored it for some time. He retained possession of the automobile, claiming a lien for towing and storing same. The finance company foreclosed its mortgage and demanded possession of the automobile from Maxwell, who refused. The finance company then filed a replevin suit.

unrecorded mortgage or conditional contract of sale.

In *G. F. C. Corporation v. Spradlin*, 38 So. (2d) 679, it was shown that one Griner purchased a vehicle under an installment contract providing for retention of title in the seller until payment of the full purchase price. Griner placed the vehicle in a garage for repairs and the garageman commenced the work before the conditional sales contract was recorded. When the repairs were completed the garageman refused to deliver possession to Griner until the repair bill was paid.

In subsequent litigation the higher court held the garageman's lien was superior to the conditional sale contract. Hence, the finance company which held the notes and conditional contract was compelled to pay the garageman before it or the purchaser could take possession of the vehicle from the garageman.

For comparison, see *Liberty v. Walker*, 199 Pac. (2d) 205. Here the testimony showed facts, as follows: A garage owner held an automobile to secure payment of a \$458 repair bill. The work was done on the car



EQUIPMENT BECOMES REAL PROPERTY WHEN ATTACHED TO PLANT AND LIEN HAS PRIORITY OVER A CHATTEL MORTGAGE

The higher court held that Egan's lien was invalid as to the finance company. In other words, the latter's mortgage was held superior to the garageman's lien. The court said:

"A garage keeper does not have a prior lien for towing and storing an automobile as against the claim of a bona fide holder of a recorded chattel mortgage."

Garageman Has Superior Lien

Recently the higher court decided: If a garageman or service station repairs mortgaged equipment, he has a lien superior to the holder of an

January 6. Liberty Finance Company held a note and recorded mortgage on the car due 7 weeks before the car was taken to the garage for repairs.

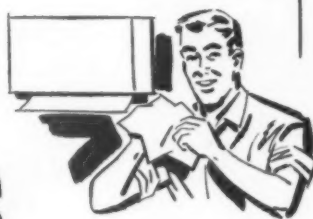
The Liberty Finance Company sued the garage owner to recover possession of the automobile. However, since the mortgage and note were overdue, the higher court held that the garage owner could keep the automobile. This court said:

"So long as the property legally remained in his (garage owner's) possession, this lien was in force. The mortgage showed upon its face

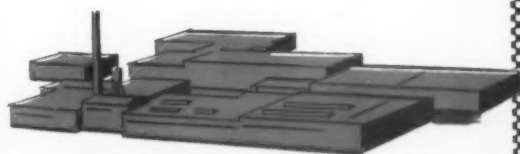
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Tester Accurately Measures Torque or Tension



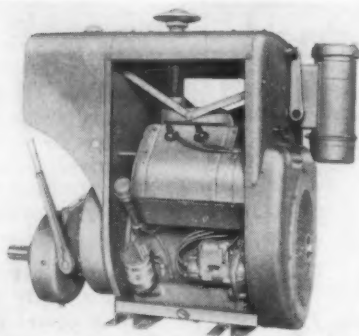
Torque or tension can be accurately determined by the torque wrench tester No. 10, product of John Chatillon & Sons, 85 Cliff St., New York 38, N. Y. It is designed with four stations: (1) to test wrenches having capacities from 1000 to 7500 ft/lb and to test tensiometers up to 3000 lb capacity; (2) to test wrenches having capacities from 0 to 1000 ft/lb; (3) to test wrenches having capacities from 1000 to 10,000 in./lb; (4) to test wrenches having capacities from 0 to 100 in./lb. The first station is graduated in increments of 10 ft/lb; the second, of 1 ft/lb; the third, of 10 in./lb; the fourth, of 1 in./lb.

New Rosin Core Solder Is Active Yet Non-Corrosive

A new rosin core solder, active yet non-corrosive, that spreads 30% more than conventional rosin core solders, has been developed by Federated Metals Division, American Smelting and Refining Co., New York, N. Y. Oxide films and corrosion products on the parts being soldered need not slow down opera-

tions, because the solder pierces such retarding agents four times faster than ordinary solders. The flux in the new solder is just as active after standing for long periods as when used immediately. The chemicals used in the rosin core solder are commonly used in industry and have no toxicity factor whatsoever. Known as RTS 200, it is available in a wide variety of wire sizes, compositions, and quantities.

Engine Provides Extra Power For Operating Equipment



An air-cooled engine, called VG4D, and made by Wisconsin Motor Corp., Milwaukee, Wis., provides the extra margin of power needed for operating equipment within a 25 to 36 hp range. It has a 3½" bore, 4" stroke, and 154 cu in. displacement, developing a peak rating of 36 hp at 2200 rpm. Efficient, positive cooling is obtained even at extremely high temperatures from a large fan cast in the flywheel which forces a strong blast of air across and around the cylinders and heads. When specified, these engines may be equipped to operate on kerosene, fuel oil or natural gas.

Pistol Grip Pump Oiler



An all-purpose precision pistol grip pump oiler has been introduced by Eagle Manufacturing Company, Wellsburg, W. Va. Major features are a broadened base to prevent tilting and positive-acting hydraulic pump mechanism. No pump leathers nor soldered connections are used in the pump mechanism—and all pump parts are renewable. It is an economical, modernly styled precision oiler of quality appearance.

Compositions Give Castings Luster or Color Faster

The Hanson-Van Winkle-Munning Company, Matawan, N. J. has announced a new series of aluminum oxide compositions for the coloring operation in the finishing of zinc-base and aluminum die castings. Laboratory tests and supporting field data indicate that these aluminum oxide compositions give castings of these metals the desired luster or color faster than was before possible with compositions of the same grade of fineness. The aluminum oxide compositions may also be used in steel and stainless steel finishing.



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Save time and money with Black & Decker Tools . . . sold through leading distributors everywhere! These world-famous tools give you dependable, full-powered motors . . . perfect balance and streamlined design . . . tough, longer-wearing parts for years of top-notch service!

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Dept. 607, Towson 4, Md.

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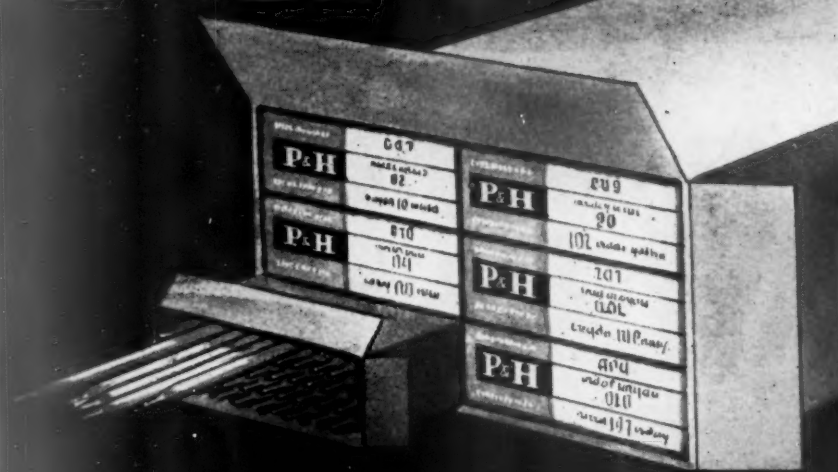


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Handy, small-package assortment of electrodes
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7 different
electrodes
(Approximately 27 lbs.)

- ★ AC-3, 1/8", 5/32", 3/16" — For all position welding of mild steels and sheet metal. AC or DC.
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- ★ 70LA2, 5/32" — For high-carbon, alloy, high-sulfur, free-machining, cold-rolled, and other hard-to-weld steels. Ideal for steel casting repairs. AC or DC.
- ★ Harstain, 1/8" — For spring steels and stainless steels of all kinds. AC or DC.
- ★ Nicast, 1/8" — For machinable welds on cast iron. Nicast welds are strong and non-porous.

\$13.90

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Maintenance Pack

Why buy seldom-used electrodes in quantities larger than you need? Now, in one convenient package, you can keep some of each type on hand economically — and get replacement packages as you need them.

The P&H Maintenance Pack equips you to do all kinds of repair and maintenance jobs with the *right* electrode. All rods are packaged to stay dry — and are clearly labeled to make selection easy.

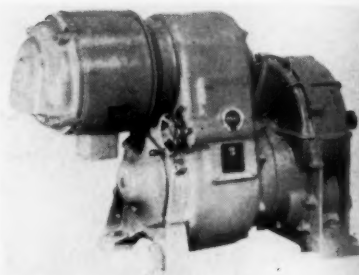
Be ready for emergencies. Save time, trouble, money. Order a P&H Maintenance Pack from your P&H representative or local distributor. If you don't know who he is, write for his name.

P&H WELDING DIVISION
HARNISCHFEGGER CORPORATION

4577 West National Ave., Milwaukee 45, Wis.
2497



Heavy Duty Variable Speed Drives, Infinitely Variable



A heavy-duty variable speed drive is offered by Sterling Electric Motors Inc., 5401 Anaheim-Telegraph Road, Los Angeles 22, Calif. Two types 20 hp and 25 hp are available with speed variation of 2:1, 3:1, and 4:1. They are described as rugged, self-contained, heavy duty, electric power drives providing infinite variable speed in the low speed ranges. The 20 hp type is available with maximum speeds ranging from 176 rpm to 42 rpm and the 25 hp type with maximum speeds ranging from 176 rpm to 64 rpm. Efficient power transmission and accurate maintenance of any selected speed are assured by means of positively adjusted variable pitch pulleys. There is provision for both internal and external cooling.

Half-Ton Crane Has Low Boom, Narrow Platform



Lempco Products, Bedford, Ohio, calls its new "Mobilcrane" the safest and most stable half ton crane on the market. It features a low boom and a narrow platform, and lifts and moves up to 1,000 lbs. It operates easily in close quarters and is low enough to go into elevators and small enough to work in aisles and pass through doors. The crane will move and place assemblies, tote pans, waste drums etc. Because of its comparatively smaller size, it serves in many places where larger cranes would be difficult to maneuver. It has a lift height of 6' and features single unit hydraulic pump, without hoses and outside couplings.

Pressur-Forming

**ASSURES A BETTER FIT,
GREATER STRENGTH, LONGER LIFE**

ALLEN'S specialized and perfected method of cold forging Allenoy steel produces the tremendous strength, fatigue resistance and precision that made Allen the *Number One* name in socket screws. Full "pressur-forming" preserves the tough Allenoy fibers continuous, uncut and concentrated where strength is needed most . . . conforming to the contours of screw head, socket and threads.

ALLEN PRESSUR-FORMING pays off in precision screws that you can count on to speed assembly, stand up better under continued hard usage. To be sure you get the advantage of "pressur-forming"—just remember to get genuine Allens, the easy name to remember because Allen *stands* for socket screws. The leading Industrial Distributor in your area stocks a complete line.



Allen 'pressur-formed' cap screws are standard stock items in sizes from No. 4 thru 1 in. Flat head cap screws, No. 4 thru $\frac{3}{4}$ in. Both N. C. threads. Many sizes are also standard in stainless steel, or in Allenoy steel with N. F. threads.



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...Steady Production



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CONVEYOR BELTING

Round the clock production! It's yours with Quaker belting for long hauls, short pulls, tough loads or steep inclines. Carefully engineered and rigidly pretested for exceptional resistance to high flexing, tension and wear. Tough, highest quality rubber encloses desired number of friction plies uniformly tensioned for safe overall shock absorption. In any desired weight or cover thickness for wet or dry conveying.

Write for name of nearest Quaker distributor.



Belting, Hose, Packing and
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construction for every need

QUAKER RUBBER CORPORATION
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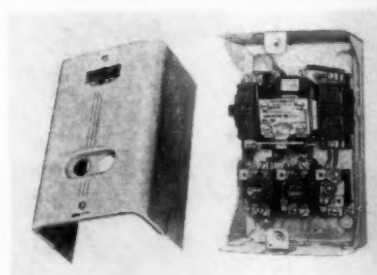
PHILADELPHIA 24, PA.
Branches in Principal Cities

Truck-Trailer Handles Palletized Loads



Palletized loads can be more effectively handled with its combination hand truck-trailer, 4,000 lb. capacity, says Mercury Mfg. Co., of Chicago, Ill. It is an all-steel, caster-steer trailer equipped with a simple brake mechanism, designed to permit easy manual control of the hand truck and load, when operating on grades. Flush construction of the unit makes it suitable for hauling pallet loads of materials. Safety self-couplers at each end of the unit equip it for trailer duty in trackless-train operation. Hyatt roller bearing mounted wheels, of the molded-on solid rubber type, insure top riding performance.

Magnetic Starters Feature Simple Construction



Cutler-Hammer Inc., 312 N. 12th Street, Milwaukee, Wis., has a new line of magnetic starters, contactors and relays. It incorporates a simple 5 unit construction for easier installation, better work and longer life. A wrap-around cover pulls off, fully exposing the front and both sides of the unit for 180° accessibility. The 5 independent parts consist of 2 contact blocks, a magnet coil, an armature and a 3-coil or 2-coil overload relay mounted on a steel panel. Each part can be removed without disturbing another part. The 3-coil, adjustable overload relay permits 4 ratings from each heater coil by changing its position. This adjustability protects within 3% of full load motor rating.

**GLOBE Seamless
GLOWELD Welded**

- Resistance to Corrosion
- Strength at High Temperatures
- Resistance to Oxidation at High Temperatures
- Ease of Fabrication

TYPICAL ANALYSES AND TYPES:

302	309S	316Cb	330	410
302B	309Cb	317	347	430
304	310	321	403	443
308	314	329	405	446
309	316	INCONEL * — NICHROME **		

*Registered U.S. Trade-Mark **Trade-Mark Reg. U.S. Pat. Off. D-H Co.

Globe produces more than 26 standard analyses of stainless steel tubes — also special analyses when required. Because varying analyses have widely varying service characteristics, Globe will make recommendations only after careful study of your particular problem.

GLOBE

specialization...

meets your exact requirements in

STAINLESS STEEL TUBES



Write for Bulletin 333 — Corrosion and Heat Resisting Steel Analyses Chart — a valuable reference tabulation of stainless steel analyses as produced by various manufacturers.



Piercing, rolling and reduction of seamless tubes is closely monitored from this control room — typical of the highly specialized equipment in the Globe mill.

SIZE RANGE:

Globe seamless stainless steel tubing may be had in sizes from ½ inch to 6 inches O.D., and in pipe sizes ¼ inch to 6 inches, standard, extra strong and double extra strong weights.

Gloweld electric welded stainless steel tubing is available in sizes ranging from ¼ inch to 5 inches O.D. inclusive; in standard weight pipe (schedule 40) sizes ½ inch to 2 inches — lightweight pipe (schedule 5 and 10) ¼ inch to 4½ inches inclusive.

TOLERANCE RANGE:

All stainless tubing furnished to standard A.S.T.M. specifications unless otherwise specified to suit your particular application requirements.

Globe specialization gives you uniform high quality...

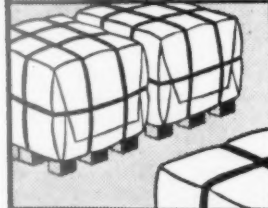
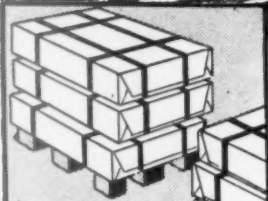
Precision checks — and re-checks — at every stage of production insure Globe stainless steel tubes that meet *your* exacting specifications. For more than thirty years, specialization in production of steel tubes has key-noted all Globe research, engineering and mill operations. Write for the Globe Stainless Steel Tubes catalog.

GLOBE STEEL TUBES CO., Milwaukee 46, Wis.
Chicago — Cleveland — Detroit — New York — Philadelphia — St. Louis — Denver — Houston — San Francisco — Glendale, Cal.

Producers of Globe seamless stainless steel tubes — Gloweld welded stainless steel tubes — alloy — carbon seamless steel tubes — Globeiron (high purity ingot-iron) seamless tubes — Globe welding fittings.



NEW PROTECTION



Glas-Kraft has amazing all-directional strength because it contains up to 315 feet of continuous specially-treated fibers swirled into each square foot. Fibers are waterproof bonded under heat and pressure between two plies of finest specification kraft.

FREE. Send for new Glas-Kraft Folder and Prices today. Glas-Kraft is supplied to the U. S. Government in quantity. It meets JAN-P-125 specifications for barrier wrapping material, Types E-1, E-2, E-3. It also meets Federal Specifications UU-P-147, UU-P-264-A and UU-P-271-B.

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store it!... IN GLAS-KRAFT

GLAS-KRAFT — The smoothest, lightest, most pliable reinforced paper available — keeps your materials, products and equipment safe from weather, wear and the hazards of transit or storage. Strong and tough, it is hard to puncture and difficult to tear. It is the most waterproof reinforced paper on the market.

Ask for **GLAS-KRAFT** . . . the non-deteriorating, all-purpose paper. Use it for wrapping and packaging steels and other metals, machinery, paper, leather, textiles, chemicals, cement, wirestock, furniture, etc. Use it for wraps, covers, shrouds, tarpaulins, bag, box, case and barrel liners. Use it for unitized loading of freight cars and trailers. Use it for protecting floors or curing concrete. Use it when you want a paper to perform where others fail.

OTHER GLAS-KRAFT PRODUCTS

- **SEALING TAPE** for Carton Closures. Five times stronger than ordinary sealing tape. Will not cut carton. Replaces string, rope, wire and strappings.
- **GLAS-TAPE** (ungummed). A simple attachment on your present equipment permits you to use ungummed Glas-Tape with Dorex adhesive. Weather-proofs the manufacturer's joint on your own cartons. Creped outer surface minimizes joint itself. Also available in gummed form.



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BETTER INDUSTRIAL PAPER PRODUCTS BY

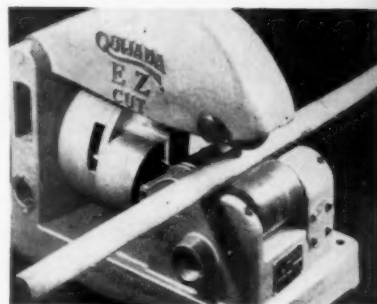
GLAS-KRAFT, INC.

LONSDALE, RHODE ISLAND

Adaptable Belt-Drive Utility Blowers

Belt-drive utility blowers in sizes from 9" to 30" have been announced by the Hartzell Propeller Fan Co., Piqua, Ohio. The blowers are equipped with an adjustable motor pulley to provide for variations in speed to meet changing pressure and volume requirements. They are available with either clockwise or counterclockwise rotation; housings are easily rotated at time of installation to any of eight discharge positions. Wheels are dynamically balanced to eliminate vibration and insure quiet operation. They can be furnished with motors to meet all current characteristics, and special operational requirements.

Portable Machine Reduces Pipe-Cutting Time



Time saving in cutting pipe, tube and conduits is claimed for the portable cutter being placed on the market by the Quijada Tool Division of Gaines-Collins, 5474 Alhambra Ave., Los Angeles 32, Calif. It features power-driven rollers which revolve around the pipe. Hence cutting is continuous, slippage is eliminated and the heat treated, high speed tool steel, cutter wheel does not wear in one spot. Therefore a single sharpening gives thousands of clean, fast cuts. The cutter will handle pipe from $\frac{3}{8}$ " to 2" and tubing from $\frac{5}{8}$ " to 3". In production runs, the cutter has attained cutting speeds of 10 seconds for 2" pipe and six seconds for 3" tubing. Weight is 100 lb.

Electric Fork Lift Straddle Truck

Both short in length and light in weight, it will do right-angle tiering in five- to six-foot-wide aisles and can operate in elevators and on flooring that will not sustain heavier rider-type electric trucks. The truck features three speeds forward and three speeds reverse, with time

(Please turn to page 134)



Corrosion won't hurt this **TRI/CLAD** motor's cast-iron frame

REG. U.S. PAT. OFF.

HERE'S A COMMON SIGHT AROUND MANY PLANTS—

A G-E Tri-Clad motor operating reliably and continuously under the extremely corrosive conditions that cause many other motors to fail.

THAT'S WHY YOU CAN EXPECT superior performance from G-E Tri-Clad motors. Consider these facts:

CORROSION-RESISTANT CAST-IRON means longer motor life. Unlike steel, cast-iron resists corrosive pitting, even when the paint is chipped.

RIGID, CAST STATOR FRAME with integrally cast feet, can't be twisted out of line by accidental jarring or by excessive "bolt-down" pressure on the feet.

STRONG, CAST-IRON END SHIELDS have cast ribs for extra strength without adding extra weight . . . protect the true motor alignment even under heavy shaft loads.

ORDER G-E TRI-CLAD MOTORS from your nearby G-E Apparatus Sales Office or G-E Agent or distributor. General Electric Co., Schenectady 5, N. Y. 752-19

You can put your confidence in—
GENERAL  ELECTRIC



... THEN WE INSTALLED ALGRIP Thus Doubling Production Efficiency And Lowering Big Insurance Costs



In a large Eastern rolling mill, a ramp from the production floor to a storage area above was so slippery from oil and grease drippings that a fork-lift truck could not climb the incline by itself. An unloaded fork-lift truck had to push the loaded one. Already a safety hazard, the slippery ramp also caused production inefficiency.

INCREASED:
Production efficiency
by more than 50%

LOWERED:
Accident insurance
premiums to save
thousands of dollars.

When A.W. ALGRIP Abrasive Rolled Steel Floor Plate was installed on the ramp, skidding stopped, accidents were eliminated, and one truck did the job better than two did before. *Greater production efficiency and lowered insurance rates paid for the ALGRIP installation.* Safe for vehicles as well as men, ALGRIP gives even steep inclines a hard-gripping, anti-skid surface.

In ALGRIP, tough abrasive particles (the same as used in grinding wheels) put hundreds of tiny safety brakes in every footstep—making it virtually impossible to slip. ALGRIP never wears smooth—heavy use only exposes new abrasive particles. The tough rolled steel in ALGRIP makes this floor plate stronger than other abrasive floorings. For safety that pays for itself, get the complete ALGRIP story by writing today for our new Booklet AL-31—without obligation.

At your request, an Alan Wood Steel Company safety engineer will call on you to show you how ALGRIP can be profitably used in your plant to lower insurance rates, raise production, and eliminate accidents.

Over 125 Years of Iron and Steel Making Experience

ALGRIP Abrasive Rolled Steel Floor Plate
ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

Other Products: A. W. SUPER-DIAMOND Floor Plate • Plates • Sheet • Strip
(Alloy and Special Grades)



(Continued from page 132)
delay controls between speeds for smooth acceleration. Available in 2,000 lb. and 3,000 lb. models, it can lift loads to as high as 133 in. to maximum use of air rights. The drive unit consists of a horizontally



mounted motor with direct gear drive to splined axle. The steering unit provides a 200 deg steering arc. It is made by Yale & Towne Mfg. Co., Roosevelt Blvd., & Haldan Ave., Philadelphia 15, Pa.

Metal Baskets Aid Bulk Handling of Small Parts



Bulk handling of small parts, or in-process storage are both facilitated by expanded metal baskets, manufactured by Wire & Iron Products Inc., Detroit, Mich. They are made of sturdy steel frames welded to one-piece, and pre-formed expanded metal panels. Full or empty, the baskets stack one on top of another. They have comfortable handles for lifting or hand carrying, where necessary. The flattened expanded metal used in these baskets is of two mesh sizes: (1) $\frac{1}{4}$ " mesh that will hold $\frac{1}{8}$ " dia parts; (2) $\frac{1}{2}$ " mesh that will hold $\frac{5}{16}$ " dia parts. Standard size basket is $21\frac{1}{2}$ " by $13\frac{1}{8}$ " by 6". The baskets are zinc plated for rust resistance.

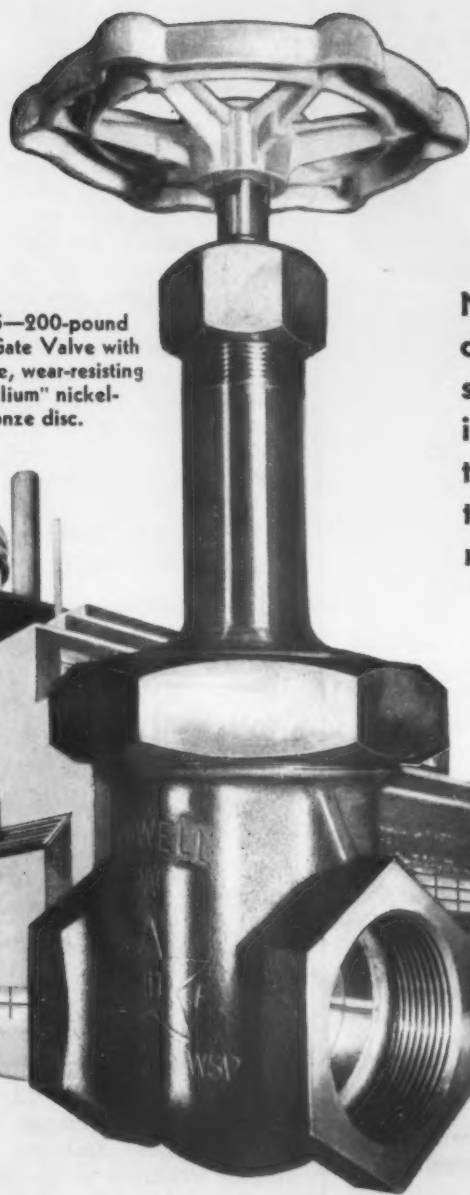


Fig. 375—200-pound Bronze Gate Valve with renewable, wear-resisting "Powellium" nickel-bronze disc.

**The name "POWELL"
on a valve assures
absolute dependability**

Naturally, in buying a valve, the first consideration is its ability to perform a specific service. But that is not all. For it must also be a valve that will continue to function dependably for a long time. Powell Valves have an established reputation for this dependability.

**The Wm. Powell Company
Cincinnati 22, Ohio**

POWELL



**BRONZE,
IRON, STEEL AND
CORROSION-RESISTING VALVES**

WASHERS and STAMPINGS

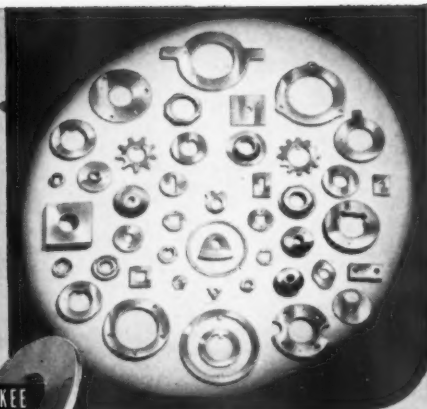
*Geared to Industry's
Production Demands
Since 1887...*



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WROT WASHERS

Over a period of 65 years, producing standard and special washers of all types for all industries, we have made up more than 25,000 sets of dies . . . used in the production of washers which are stocked in thousands of different sizes. On special orders we will make up dies to your specifications.

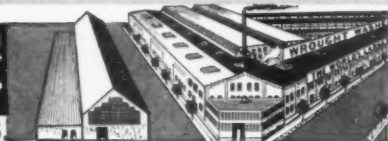
Let us quote on your requirements for washers and stampings . . . covering fabrication in any material and any finish . . . machined, heat-treated or surface ground, as may be specified.



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High-speed, quality production with custom-made precision. Wire formed to any shape for every need.

**IMMEDIATE CAPACITY FOR
DEFENSE SUB-CONTRACTS**

STRAIGHTENING & CUTTING

Perfect straight lengths to 12 ft.

.0015 to .125 diameter

WIRE FORMS

.0015 to .125 diameter

SMALL METAL STAMPINGS

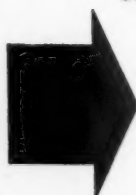
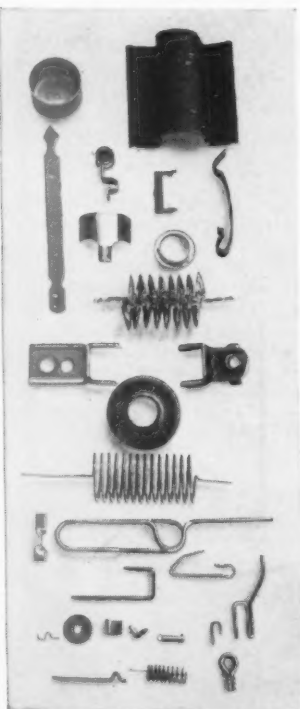
.0025 to .035 thickness

.062 to 3 inches wide

Specializing in Production of Parts for
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for Estimate.



ART WIRE and STAMPING

COMPANY

2 BOYDEN PLACE
NEWARK 2, N.

Conveyor Trolley Wheels Can Be Lubricated Automatically

Maintenance men can now lubricate conveyor trolley wheels automatically, thus doing away with conveyor stoppage while at the same time eliminating the risk of injury to workmen performing the job. A newly designed lubricator delivers a pre-set, constant shot of either oil or lubricant to each trolley wheel on each side of the conveyor system into which it is installed, simply by the flick of a switch. When every wheel in the system has been serviced, the system may be switched off and is in constant readiness to go into operation again at whatever lubrication interval load required. The Alemite Division of Stewart-Warner Corp., 1826 Diversey Pkwy., Chicago 14, Ill., is the manufacturer.

Electric Degreaser Is Portable, Heats Up Fast



J. D. Wallace & Co., 133 S. California Ave., Chicago 12, Ill., says its new electric vapor degreaser provides many features not previously available in the vapor degreasing field at approximately one-half the price of comparable units. Provided with either a 110 or 220 v heating element, it is ready for instant plug-in operation. Heat-up time is less than 20 minutes and requires only 2½ gal. of solvent. The caster-mounted base and plug-in feature makes portable operation practical, permitting use of the unit at different work stations for greater efficiency, lower investment cost, and greater space saving. The thermostatic control maintains a constant vapor level and prevents overheating.

**CLASSIFIED SECTION
SEE PAGE 380**



Within 7 minutes, he can cut your shipping costs!

This man is an expert in economical packing and sealing methods. He's your paper merchant who carries the world's largest selling gummed tape: Orange Core. If you're interested in ways to cut shipping costs, call him in. In just 7 minutes he'll tell you how you can save money while you speed your packing with Orange Core.

He'll show you how to use less tape, how to reduce your labor time. He'll show you how non-curling, *Supple-ized** Orange Core is good to the last inch. Send the coupon for Orange Core's folder, "How to make your shipping dollars go further." We'll tell you who your nearest dealer is.

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CONSISTENTLY SUPERIOR

The world's largest selling gummed tape

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"HOW TO MAKE YOUR SHIPPING DOLLARS GO FURTHER"

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I want my free copy of your informative folder, "How to make your shipping dollars go further" and give me the name of my Orange Core dealer.

NAME _____

COMPANY _____

STREET ADDRESS _____

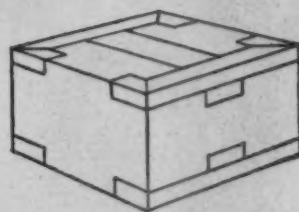
CITY _____

ZONE _____

STATE _____



Did you know?



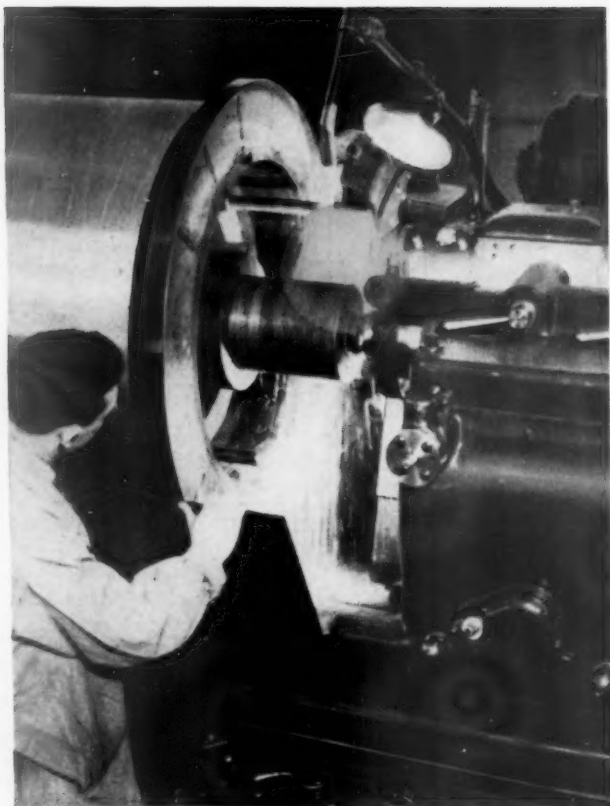
Gummed Tape is the only closure that dresses up your cartons

Your cartons look neater and more efficient with Gummed Tape. Every seam and corner is smoothly finished off with a closure of tape—"tailor made" to the job.

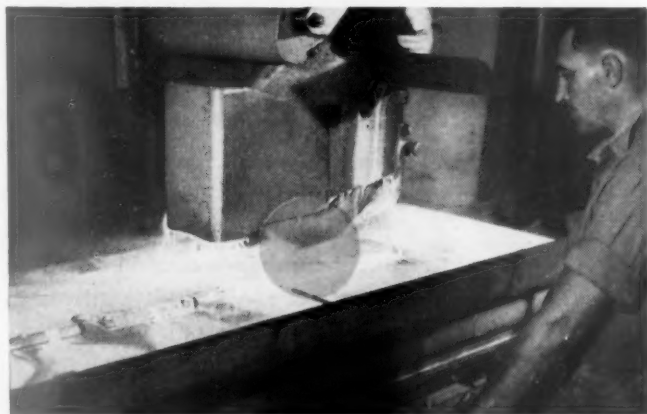
You can choose Gummed Tape in a variety of attractive, contrasting colors. You may have your tape printed, too, with your company name, trade mark, or message. Each carton becomes an advertisement for you.

Your shipments have more customer appeal when protected with Gummed Tape. They arrive at your customer's door in better condition... with their contents intact, too, sealed against dust, moisture, and vermin.

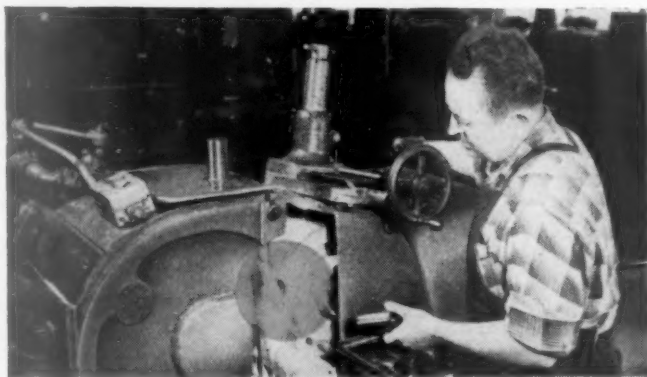
Even after your carton has been delivered and opened, it stays neat, because it opens cleanly and easily, without risk of injury to merchandise or hands.



YOU CAN SEE THE DIFFERENCE. The spark stream from a Norton G Bond ALUNDUM wheel is more continuous, more even, indicating uniformity of wheel structure and of cutting action.



YOU CAN HEAR THE DIFFERENCE. Norton G Bond wheels grind with the pleasant, steady swish-h-h of free, easy cutting. You hear no harsh grinding noise.



YOU CAN PROVE THE DIFFERENCE. From general purpose to high production work, every job you do with the new G Bond wheels will benefit by the unique cutting action that grinds faster, freer, and cooler.

**NOW!... Boost your profits
with the NEW**

G BOND

**for your latest Norton
value-adding**

"TOUCH OF GOLD"

It took five years of continuous research and field-testing to bring you the new, exclusive Norton G Bond.

Now the most efficient vitrified bond ever produced is ready to add your latest "Touch of Gold" for increased product-value — and profits — in a wide range of precision and semi-precision grinding jobs.

Secret of the new G Bond's great superiority is the way it holds each abrasive grain for maximum cutting action. Then, *just when it should*, it lets go, assuring a constant grinding surface of new grains with fresh, sharp cutting edges. It is designed to do this better than the bond in any wheel you have ever used before.

As a result, Norton ALUNDUM* grinding wheels made with the new G Bond have definite advantages that you can see and hear as they grind — and that are *proved* in the better work they turn out for less cost.

That's your newest "Touch of Gold" developed by Norton to help boost your profits and keep your operators happy. Make sure you add it to your production. And remember, only Norton offers you over 65 years of experience in abrasives, grinding wheels and grinding and lapping machines.

SEE YOUR NORTON DISTRIBUTOR

about arranging a test of the new G Bond ALUNDUM wheels in your plant. Or write to NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities. Export: Norton Behr-Manning Overseas Incorporated, Worcester 6, Mass.

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THE "TOUCH OF GOLD"
IS JOB-PROVED. During extensive field-testing, the new Norton G Bond wheels have made a big hit with operators experienced in many types of grinding. Why not get first-hand reports on these radically improved wheels? Try them in your own shop.

7 BIG ADVANTAGES Norton G Bond ALUNDUM Wheels:

- Do more work per wheel
- Cut freer, cooler, faster
- Dress easier — more pieces per dressing
- Cover a wider range of jobs
- Hold shape — better for form grinding
- Hold corners better
- Ideal for crush dressing

NORTON

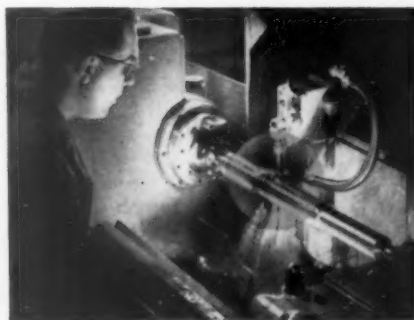
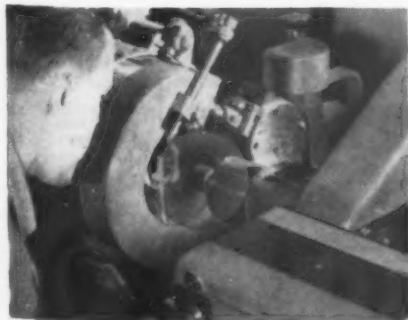
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to make
other products better*

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W-1475



BROAD USEFULNESS. The new Norton G Bond ALUNDUM wheels can boost your profits on many types of grinding, especially

cylindrical, centerless, surface, internal, gear, tool and cutter, form and thread grinding, and saw gumming.

APRIL, 1953

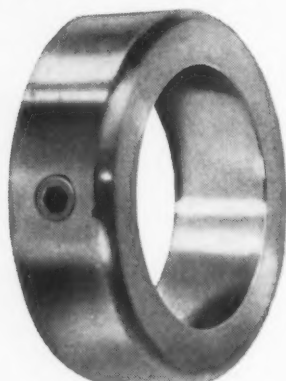
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139

standardize on standard

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Buy standardized, precision-made HALLOWELL Steel Collars from your distributor's stocks. You'll save time and money by picking up the telephone and placing your order. Deliveries are prompt. 42 stock sizes—for shafts from $\frac{3}{16}$ " to 3" diameter, inclusive—all positively positioned on the shafts by UNBRAKO Self-Locking Socket Set Screws, the screws that won't work loose.

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Our Fiftieth Year : A START FOR THE FUTURE

HALLOWELL POWER TRANSMISSION DIVISION

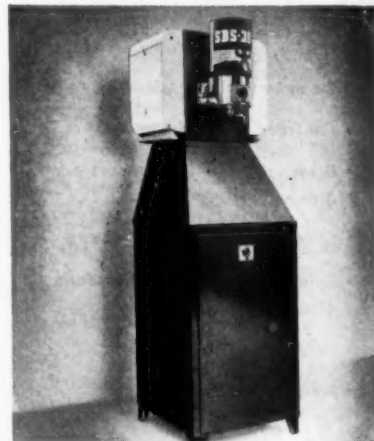
SPS

JENKINTOWN PENNSYLVANIA

Laminate With Superior Insulation Resistance

The Chemical Division of General Electric Co., Pittsfield, Mass., has come up with a new laminate which retains superior insulation resistance under humid conditions. The phenolic paper base material, called G-E 11541 Textolite, is particularly recommended for electronic component parts. Tests show it to have an insulation resistance of 100,000 megohms minimum after 96 hrs in 90% relative humidity at 35 C. It has good low loss properties and high dielectric strength. It is available in sheets from 0.015 to 0.25 inches thick.

Waterless Wash Station Can Be Set Up on Production Line



Sugar Beet Products Co., Saginaw, Mich., has announced a Waterless wash station. This makes it possible to substantially save worker off-the-job time and boost productive time in industrial plants by actually "bringing the washroom to the worker." The portable washroom dispenses the correct amount of SBS-30 waterless skin cleanser to the user. It provides for paper towels to remove cleanser and grime and there is also a receptacle to receive the waste towels—all in one unit. The washroom needs no plumbing and, being portable, can be set up along production lines.

New Rubber-Impregnated Leather Packing

E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia 33, Pa., is marketing a new type of rubber-impregnated leather packing which combines the longer life and lower friction of leather with the non-porosity, high resilience and heat

(Please turn to page 142)



Metal Arts Nameplates REFLECT QUALITY, ADD SALES APPEAL TO YOUR PRODUCT

A Metal Arts die-embossed name plate on your new or established product reflects quality and adds sales appeal. Made to your engineer's specifications in any shape, form, design, color, with either vitreous or duco enamel, or if desired, we will create a distinctive name plate for you.

The many leading companies using Metal Arts name plates are your assurance that there's no finer name plate for your product.

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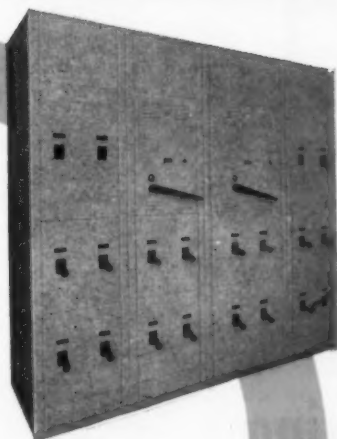
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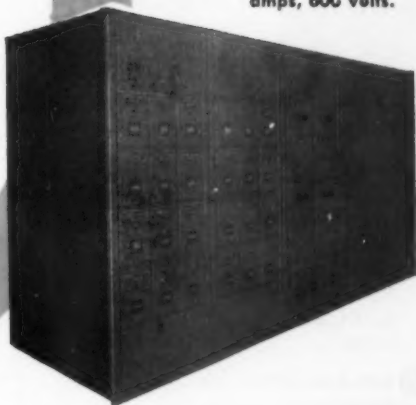


Ⓣ SHUTLBRAK
30 to 1200 amps,
250 volts AC or DC
and 600 volts AC.



Ⓣ CIRCUIT BREAKER
15 to 600 amps, 250 volts
AC or DC and 600 volts
AC. For larger capacities,
Air Circuit Breakers are
used.

Ⓣ KLAMPSWITCHFUZ
30 to 600 amps, 250
volts AC or DC.
SNUFARC, 30 to 200
amps, 600 volts.



STANDARDIZED SWITCHBOARDS

STANDARDIZED Ⓣ SWITCHBOARDS are noted for their efficiency, safety, and dependability.

Built of standardized pre-assembled units, incorporated in standardized enclosures, these sturdy, long-lasting and trouble-free power centers embody the latest features of design and operation.

Standardized Ⓣ Switchboards are of three types — the *Shutlbrak*, a safety type switchboard designed for frequent operating use; the *Klampswitchfuz* and *Snufarc*, which features a dependable hinged type, pull-out switch unit for disconnect service on lighting and power circuits, and the *Circuit Breaker*, another

safety type, featuring the latest developments in automatic circuit protection.

All Standardized Ⓣ Switchboards are factory assembled and shipped ready for connection to main and branch circuit cables. Units can be arranged singly or grouped because all sections fit readily together. Removable end walls permit the addition of sections on either side.

Want to know more about these efficient, long-lasting power centers? Your nearest Ⓣ representative listed in Sweet's will be glad to give you complete information.

Frank Adam Electric Co.

P. O. BOX 357 ST. LOUIS 3, MISSOURI

Makers of BUSDUCT • PANELBOARDS • SWITCHBOARDS • SERVICE
EQUIPMENT • SAFETY SWITCHES • LOAD CENTERS • QUIKHETER



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Year

THE REAL COST OF SHELVING
IS THE ERECTED COST



3

reasons why

De Luxe Steel Shelving

costs you
less

- 1 **Fewer Parts**—DeLuxe has designed one part where ordinary shelving uses three. Example, our bin-type "I-Beam" upright. *Fewer parts mean fewer man hours to install.*
- 2 **80% Less Bolts**—DeLuxe shelving uses patented, boltless shelf brackets, thus requires *no tools* for either installation or adjustment.
- 3 **100% Adjustable**—Shelves in each section are independently adjustable, without disturbing other contents. DeLuxe shelving erects on the spot, in position where you want it . . . the only shelving that does all this.

There is a DeLuxe factory representative in your area who will give you our engineering, planning and layout service without obligation. Write today for free catalog.



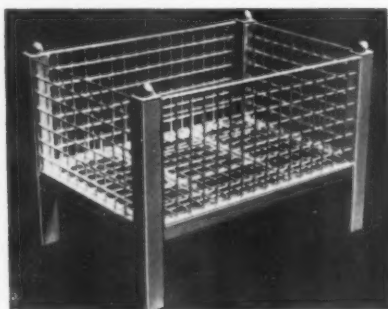
De Luxe Metal Furniture Co.
309 Struthers St., Warren, Penn.

For over 25 Years Manufacturers of: Storage Shelving
Library Shelving • Storage Cabinets • Shop Equipment

(Continued from page 140)

resistance of synthetic rubber. It is pre-vulcanized, pre-cured and has an unusually high dimensional stability. At the outset the leather cups will be produced only in standard sizes from 7/16" OD through 6" OD. They are non-porous, due to the complete impregnation of synthetic rubber and have a wide temperature range from minus 65 to plus 200 F., and a wide operating pressure from 0 to 15,000 psi.

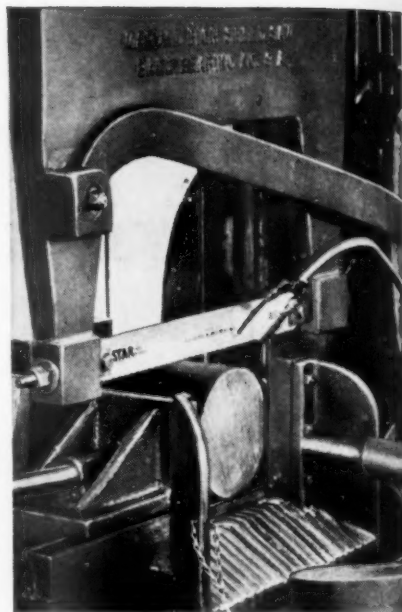
Wire Stacking Box Is Light, Permits Drainage



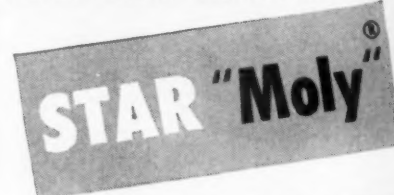
Materials handling is made easier by a wire stacking box being placed on the market by Equipment Mfg. Inc., 21550 Hoover Road, Detroit 5, Mich. The box, instead of using corrugated sheet metal, has sides and bottom of wire fabric to decrease weight and allow for ventilation and drainage. The wire is welded at both ends and each intersection for strength and rugged shop use. Bottom frame and corner uprights are square welded steel tube. Stacking caps of the self-centering type on the corner posts permit rapid and safe lift truck tiering to conserve space. The standard model has a content of approximately 30 cf and weight capacity is 4,000 lb. Aluminum paint finish is standard.

Integral-Shaft Type Sheave

A rigidly-constructed, "D" section, integral-shaft type motion-control vari-pitch sheave unit, says Allis-Chalmers Mfg. Co., Milwaukee 1, Wis., is suitable for applications wherever an outboard bearing is employed. The sheave discs are assembled directly on a finished shaft. This differs from the conventional through-shaft type with its discs fitted on a sleeve which is mounted on a shaft and keyed to it. The new sheave unit is quickly and easily installed and replaced. Large diameter shaft extensions—up to 4 3/4"—are possible with the new type sheave unit.



**best metal cutter...
real cost cutter...**



High Speed **POWER** Hacksaw Blades

To cut your initial power hacksaw blade costs at least 15%, tell your Distributor you want STAR "Moly" High Speed Power Blades.

STAR "Moly" Blades give you an extra dividend, too—cutting that's been proved faster and more efficient.

Over the years, *quality* above all has made STAR Blades industry's *preferred* blade—top quality steel, carefully heat treated, manufactured on specially designed equipment, to give you fast, economical cutting and long blade life.

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STAR "Moly" Blades are sold only through recognized Distributors—the men you know and have confidence in, the men who have inventories on hand to give you fast delivery where and when you want it. It is wise to buy whatever you can from your recognized Distributor.

1832



CLEMSON BROS., Inc.

MIDDLETOWN, N. Y., U. S. A.

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Saw Blades, Frames, Metal Cutting Band
Saw Blades and Clemson Lawn Machines.

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You get
**UNBIASED
COUNSEL**
based on
all abrasive
methods

Your business, in mass production of parts or finished assemblies, is the problem of generating close tolerance sizes, of producing high surface finishes, of removing stock. The business of CARBORUNDUM is the exclusive ability to recommend and furnish you the specific type of abrasive product which will give you highest quality at lowest cost, on every operation you perform.

Take surfacing, for instance. There are at least 11 different methods of grinding plane or flat surfaces with abrasives. Is your present method the best—the most economical? How can you be sure? Ask CARBORUNDUM... for CARBORUNDUM alone has a complete branded line of grinding wheels and coated abrasives and tumbling and polishing grains. Only CARBORUNDUM can recommend without bias, on the sole basis of what's best for you.

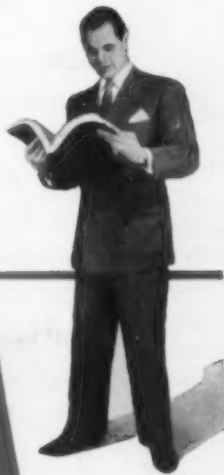
Or perhaps you manufacture table glassware. You can engrave the decorations with a grinding wheel—or you can etch them with high-velocity abrasive grain. You can finish the edges with abrasive belts, or with a grinding wheel. Whatever your method, CARBORUNDUM alone can supply *all* the abrasives you need with *one-source control* of quality... quality that's constant, identical, dependable—thus economical.

Several ways to do one operation? Call in CARBORUNDUM. Several processes on one part? Call in CARBORUNDUM. Either way, you win.

Call your CARBORUNDUM Salesman or Distributor today!

He's your best bet for complete stocks, prompt delivery... and best of all, experienced counsel on *every* new development in the *entire* field of abrasives. He's in the yellow pages under "Abrasives" or "Grinding Wheels." Phone him today—it's to your profit!

Ready now—your free copy of the new big COATED ABRASIVE SELECTOR catalog... containing detailed recommendations for both machine and hand sanding operations on tough and soft metals, glass, plastic, wood. Phone for it today.



CARBORUNDUM

MARK

... the **ONLY** source for **EVERY** abrasive product you need

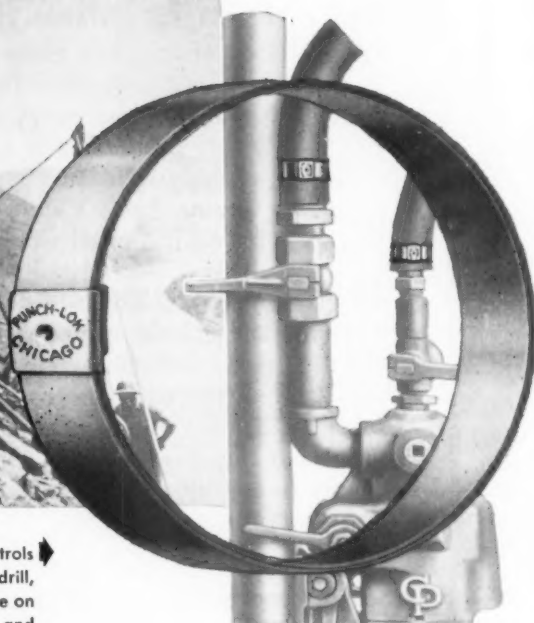
VIBRATION IS NO MATCH FOR **PUNCH-LOK**

H O S E C L A M P S

They're **LOCKED** for Safety

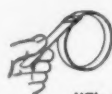


Chicago Pneumatic heavy-duty wagon drill, equipped with Punch-Lok Hose Clamps, running blast holes on the abutment faces at Hungry Horse Dam.



Close-up view of the centralized controls of the Chicago Pneumatic wagon drill, showing Punch-Lok Hose Clamps in use on the hoses leading to the drill throttle and blowing throttle.

Today . . . more and more manufacturers of pneumatic tools are turning to Punch-Lok Hose Clamps for truly dependable, *leakproof* hose connections. The Punch-Lok clamping method assures that every Punch-Lok Hose Clamp is locked in place for *keeps* . . . locked to prevent slippage which might otherwise be caused by vibration and continual hose flexing. You can depend on Punch-Lok.



"The Sign
of a
Good
Hose Clamp"

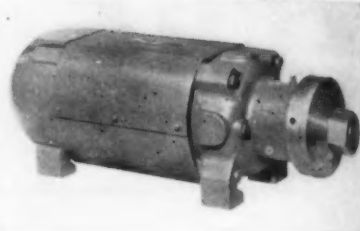
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PUNCH-LOK *Company*

321 North Justine Street, Chicago 7, Illinois

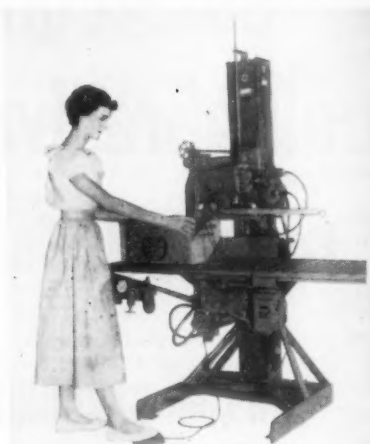
Please mention **PURCHASING** Magazine when writing to advertisers.

New Arbor Motor



An arbor motor, made by the Louis Allis Co., 427 E. Stewart St., Milwaukee 7, Wis., for use in the woodworking and machine tool industries provides a motorized arbor with minimum diameter and extremely rigid construction. It carries directly on its shaft such tools as saws, cutter heads, grinding wheels, etc. It is available with the conventional straight motor shaft or any shaft modification required by the customer. The motor is built in two diam, one covering ratings of 3, 5, and 7.5 hp continuous at 3600 rpm and the other covering ratings of 7.5, 10, and 15 hp continuous at 3600 rpm.

Retractable Anvil Stapling Machine Is Air-Operated



International Staple & Machine Co., 801 East Herrin St., Herrin, Ill., has a retractable anvil stapling machine that will simultaneously close the tops and bottoms of center slotted cartons and partial or full overlap cartons at the rate of more than 350 an hour. It works on either corrugated or fiber cartons. A retractable anvil feature of the stapler permits closure from the outside after the cartons are filled. Air-operated, the machine is semi-automatic and stapling heads function when operator touches a foot pedal. The unit automatically accommodates cartons varying in height up to 5½".

PURCHASING

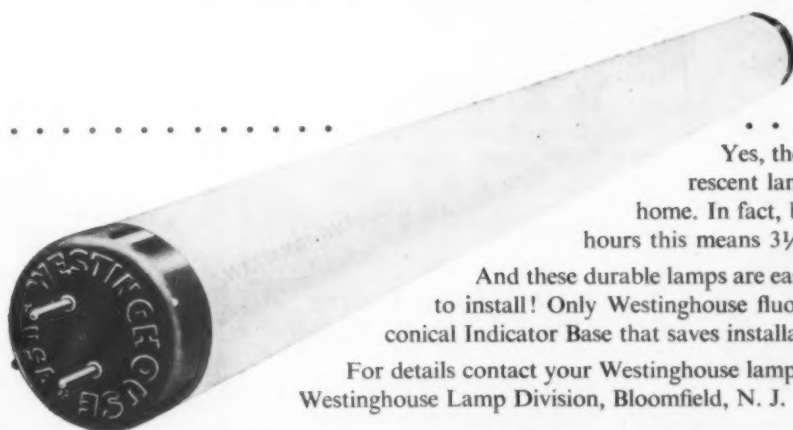
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..... **TO THIS**



**BEFORE YOUR WESTINGHOUSE
FLUORESCENT LAMP BURNS OUT**



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Yes, the standard Westinghouse Fluorescent lamp lasts for years in the average home. In fact, based on the rated life of 7500 hours this means 3½ years in an office or factory.

And these durable lamps are easier, safer, and more convenient to install! Only Westinghouse fluorescent lamps have the special conical Indicator Base that saves installation time—and thus money.

For details contact your Westinghouse lamp supplier or write
Westinghouse Lamp Division, Bloomfield, N. J.

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IN YOUR OWN PRODUCT YOU CAN HAVE A MATERIAL THAT:

- Is molded like a plastic;
- Is also made in machinable grades;
- Will continuously endure 650°F.;
- Will endure 2000°F. for brief periods.
- Can be produced to fine dimensional tolerances;
- Is dimensionally stable;
- Will hold inserts tightly over wide temperature ranges;
- And has plenty of other features.

WRITE for the full story

IN ELECTRONIC EQUIPMENT THAT YOU BUY OUTSIDE YOU CAN HAVE:

More capacity, more capabilities, in less space and with less weight. To get these advantages you must specify Mycalex Tube Sockets*; Mycalex Commutator Plates**; Mycalex glass-bonded mica Insulation.

*Mycalex Tube Socket Corp., Clifton, N. J.

**Mycalex Electronics Corp., Clifton, N. J.



MYCALEX CORPORATION of AMERICA

World's Largest Manufacturer of Glass-bonded Mica Products
Executive Offices: 30 Rockefeller Plaza, New York 20, N.Y.

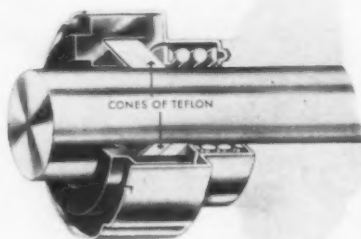
GENERAL OFFICES AND PLANT

123 CLIFTON BOULEVARD, CLIFTON, N. J.

Medium-Duty Portable Coolant Pump

A medium-duty portable coolant pump, announced by Shellback Manufacturing Co., 11831 Hamilton, Detroit 3, Mich., is designed for machines without built-in coolant pumps and not requiring the extreme capacity of a heavy duty pump. It pumps 13 gpm against 4' head and 5 gpm against 8' head. The pump is of centrifugal type with full-floating balanced impeller. The liquid coolant is drawn into pump from top and bottom, neutralizing all thrust. The pump is self-relieving under excessive pressure, thus preventing strain on hose when pet cock is shut off. The unit is 21" high and 11" in diam. Shipping weight is 40 lb.

Mechanical Seal Offers Lifetime Performance



An all-purpose mechanical seal is said to provide life-time performance in small pumps, hotwater circulators and many other rotary shaft applications. Special beveled cones made of Teflon are utilized as the flexible member. This adapts the seal for services involving water, oil, corrosives or acids; temperatures from -100 to +400 F; vacuums and pressures up to 200 psi and high shaft speeds. Being a packaged type unit, the seal provides quick and easy installation for production assembly and replacement service. This type 19 seal is available in sizes to fit shaft diameters of 1/4", 3/8", 1/2", 5/8", and 3/4". Made by Crane Packing Co., 1800 Cuyler Ave., Chicago 13, Ill.

Emergency Power Systems Use Nickel Cadmium Batteries

When regular electric current fails, automatic emergency power systems using nickel cadmium batteries will supply emergency power instantly for operation of lights, fire alarms and public address systems. The use of these batteries, together

(Please turn to page 154)

Always
SWIVEL
and
ROLL

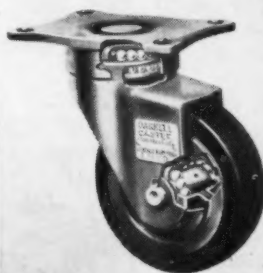
**A SAVING
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TURN**

DARNELL
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The more than 4000 types of Darnell Casters and Wheels makes it easy for you to specify the exact model for your needs, that meets floor, load and materials handling requirements. Or, Darnell's wide experience in "custom-tailoring" casters for special equipment is at your disposal.

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make light
of
your heavy loads

handle them
"THRU-THE-AIR"



Capacities
up to
15 Tons.



How much does materials handling add to your production costs? Along assembly lines? Around machine tools? On loading platforms? In and out of storage? Handling materials is the largest single cost item in most plants. Start licking it now!

Thousands of plants have found the answer to efficient movement of materials with this quick, effortless, low cost way — "thru-the-air" with P&H Hevi-Lift Hoists.

You merely press buttons to whisk loads from one station to another — no strain on skilled hands, no floor

congestion, no costly delays. With P&H's full magnetic push-button control, you can also have variable speed where needed.

P&H Hoist Engineers have helped solve hundreds of problems like yours. They can show you how to save money — in the places where most money *can* be saved.

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Or write us for Bulletin H-5.

P&H HOIST DIVISION

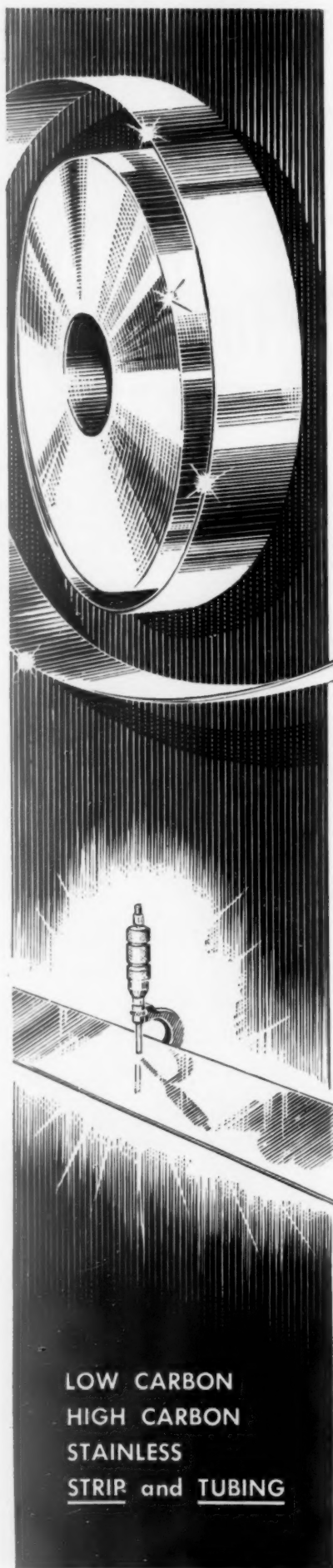
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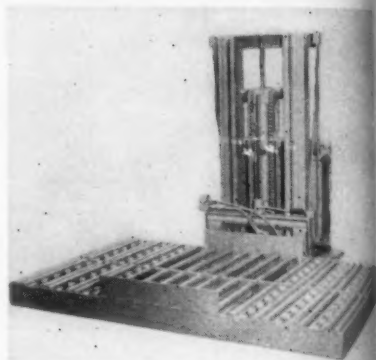
CO.

WALLINGFORD, CONN., U.S.A.

(Continued from page 148)

with automatic charging, presents advantages claimed not hitherto available with lead acid batteries. Among these are: long battery life guaranteed for ten years but might be as long as 30 years of useful life; low maintenance—water is required only once a year; freedom from danger of overcharge; freedom from deterioration—may be left idle without attention without fear of damage; have no corrosive elements. Electric Cord Co., 195 William St., New York 38, N. Y. are the suppliers.

Roller Platform Handles Boxes of Steel Sheet



Unwieldy boxes of stainless steel or aluminum sheet can be handled by a new 4-way roller platform. The roller platform is attached to the fork lift stacker. It is easily removable and conventional forks can be substituted in its place. It will handle loads weighing from 1200 to 1500 lb and is approximately 84" long x 54" wide and from 6"-14" thick. Hydraulically actuated, the roller platform engages the packaged steel in a vertical position by means of a steel plate, rotating it horizontally for transporting. Maker is Lewis-Shepard, Dept R-1 Watertown, Mass.

New Polyvinyl Resins Have Many Industrial Applications

A new series of polyvinyl chloride resins for various industrial applications is announced by Good-year Tire & Rubber Co., Akron 16, Ohio. Designated Pliovic G80V, it is a straight vinyl material having an approximate intrinsic viscosity of 0.80. It is designed to complement the use of the previously announced G90V in calendering, coating and extruding operations but has processing temperature requirements 20 to 40 F lower. The nature of the resin recommends it for use in calendered fabric, film and sheeting. It runs easily on three rolls of a standard calender.

(148)
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WHY RISK SHUTDOWNS?

WESTINGHOUSE INVENTORY PLAN GIVES YOU THE ELECTRONIC TUBES YOU NEED WHEN YOU NEED THEM

Switch from the old-fashioned method of searching for tube replacements — make sure you have 'em at your finger tips.

Production stoppages can be avoided. Here's how —

A reliable Westinghouse distributor will inventory your equipment and analyze your tube needs. He will prepare an ideal stocking plan. He will maintain a stock reserve specifically for you in his warehouse. This personalized stock is over and above your normal inventory of spare tubes you maintain for emergency breakdown.

Your Westinghouse distributor provides immediate service. In case of emergency, a call to him will bring your personalized tube replacement in a matter of minutes.

Why risk production losses any longer? Accident may strike today . . . tomorrow. Take advantage of the Westinghouse Inventory Plan as soon as possible. Call your Westinghouse distributor or write Dept. E-104.

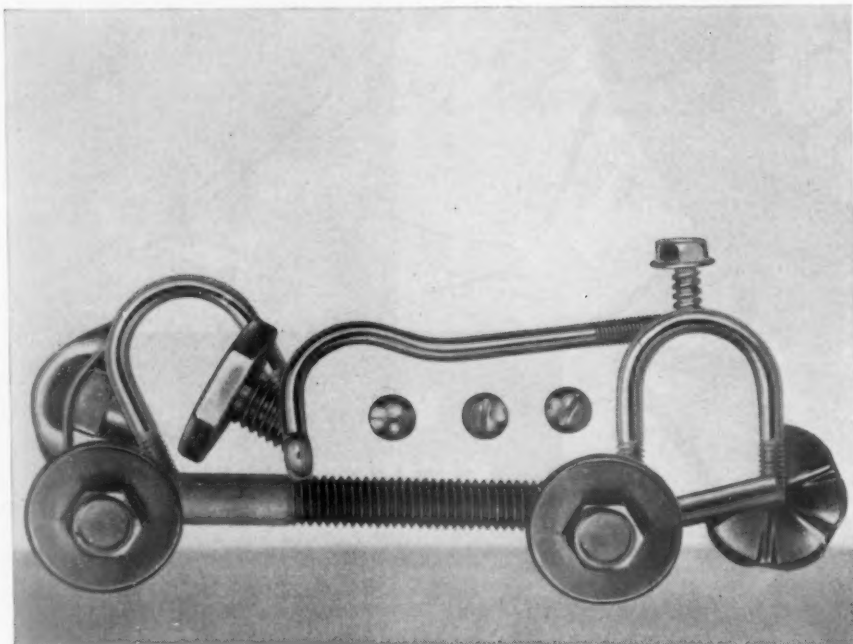
YOU CAN BE SURE...IF IT'S
Westinghouse

RELIATRON TUBES
TM

ET-95017

WESTINGHOUSE ELECTRIC CORPORATION, ELECTRONIC TUBE DIVISION, ELMIRA, N. Y.

Designed and made for **SPECIAL JOBS**



● Circle ® special fasteners can give you plenty of product design and production advantages... simplified design, extra holding strength, easier and faster assembly, lower unit cost.

Made by modern methods to meet volume demands, Circle ® fasteners are designed to your individual requirements by specialists who can demonstrate the practical advantages of calling in Buffalo Bolt. It will cost you nothing to get the facts. Simply write us.

● To simplify specifying and ordering standard fasteners... write for Catalog No. 51.

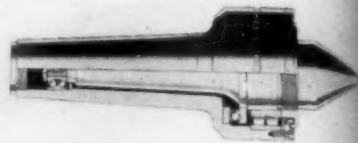


BUFFALO BOLT COMPANY

Division of Buffalo-Eclipse Corporation
North Tonawanda, N. Y.
Sales Offices in Principal Cities

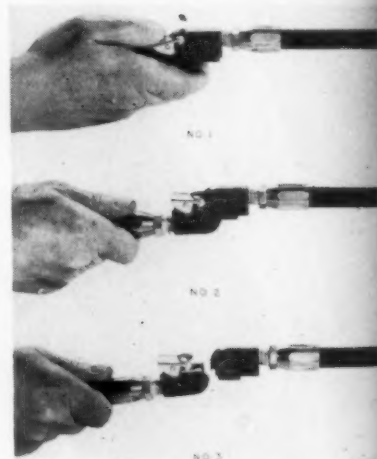
PRODUCERS OF CIRCLE ® PRODUCTS — BOLTS • NUTS • RIVETS AND SPECIAL FASTENERS.

High-Speed Spinning Center



An ultra-high speed spinning center, product of Ready Tool Co., 554 Iranistan Ave., Bridgeport 5, Conn., meets increased speeds and heavy thrust loads on spinning applications. The center utilizes 2 radial anti-friction super-accurate bearings, spaced properly to give maximum rigidity with minimum deflection. It incorporates a ball thrust bearing between the two radial bearings to assure maximum thrust loads while in operation. The center operates at even higher than 10,000 rpm without heating up, even when pressure is applied. This non-heat factor is a big personnel safety feature.

Slide Seal Coupling For Fluid-Carrying Lines



A new slide seal coupling will permit instant connection and disconnection of fluid-carrying lines by means of a simple push-pull action. Consisting of two simple 2-piece die-cast aluminum assemblies with rubber "O" rings, the coupling is lightweight, compact and low in cost. A spring actuated locking device holds each half of the coupling in the coupled position which permits full flow of fluids. Pressing the lock lever separates the coupling halves and starts the disconnecting action which is completed by a light pull. When fully disconnected, each half of the coupling forms a perfect seal. The manufacturer is Aeroquip Corp., Jackson, Mich.

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Molded plastics are a powerful tool in the hands of economy-minded fabricators who are looking for tougher, longer-lasting materials that cost less. There are plastic materials as strong as steel . . . light as aluminum . . . extremely resistant to heat, even up to 1000° F. Plastic parts can be molded to close tolerances to reduce fabricating costs, eliminate many production steps entirely.

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CROSS-SECTION of Pittsburgh-developed feather-tip Neoceta bristle—showing molded-in grooves for superior paint carrying capacity.



Mister, that **RED STRIPE** on your brush is your assurance of quality! It means that the feel of the handle, the flex of the bristles make *any* painting job easier. It means that whether you choose Red Stripe's all-Neoceta brush or Red Stripe's combination of hogs' bristle and Neoceta, you're getting a brush that paints smoother, faster, better. Why? Because Neoceta, Pittsburgh's feather-tip wonder-bristle, is designed *especial-ly* for painting. And, in hogs' bristle-Neoceta combinations, both bristles wear at the same rate—another reason for better performance and longer life. Next time you need a brush, ask your supplier to show you Red Stripe!

FREE—the story of Neoceta—its development, its amazing characteristics. Write to the address shown below for your free copy of this interesting booklet.



There's a Pittsburgh brush for every home and industrial use!



For the address of the Pittsburgh supplier nearest you, write: **PITTSBURGH PLATE GLASS COMPANY, Brush Division, Dept. M, 3221 Frederick Ave., Baltimore 29, Maryland.**

PITTSBURGH

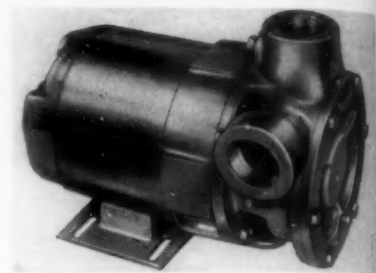


Red Stripe BRUSHES

BRUSHES • PAINTS • GLASS • CHEMICALS • PLASTICS • FIBER GLASS

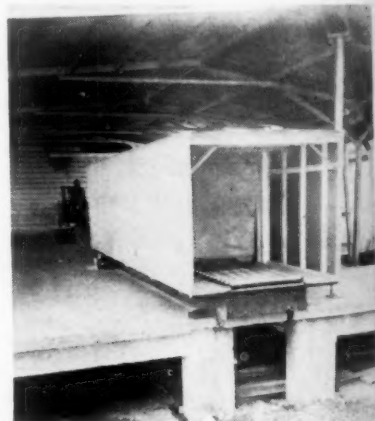
PITTSBURGH PLATE GLASS COMPANY

Close-Coupled Turbine Pumps Reduce Pump Motor Assembly



Close-coupled design of turbine type pumps with mechanical seals in capacities of 3 to 30 gpm and heads from 0 to 250' is said to reduce the pump motor assembly to small overall size. Because pump and motor shaft are integral, coupling noise and misalignment troubles are avoided. Four different positions for suction and discharge connections make for installation flexibility. Cover, inner ring and impeller of the pump are the only wearing parts and are made of bronze to assure maximum resistance against corrosion. Made by Aurora Pump Co., 12 Loucks St., Aurora, Ill.

Boom Conveyor Goes From Building to Building



Alvey Conveyor Mfg. Co., 9301 Olive St., St. Louis 24, Mo., has developed a retractable live roller boom conveyor which can be extended across a railroad siding between two buildings, and yet can be withdrawn to permit the passage of freight cars which may occasionally have to be switched between these buildings. The live roller boom is equipped with fully enclosed drive mechanism and the entire mechanism is a self-contained unit. If desired, the user can construct an enclosure to protect packages while passing between the two buildings. This enclosure rides the conveyor frame and is an integral part of the structure. A hinged door opens as packages pass along the conveyor.

Almost every day



some Safety Director



is called upon to solve a problem that

has been introduced by new processes



or projects.

Every day, in the M.S.A. Research Laboratory



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people are working to anticipate



such situations . . . and develop



and produce

safety equipment to combat them.

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and the answer in ours



it's just a matter

of getting together



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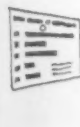
—you'll find an M.S.A. Man ready to take this all-important step



Because the M.S.A. Man's



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of the industries he serves. Because he is constantly at work



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Safety Directors, he's a rich source of helpful, practical tips on how others have solved specific



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because he handles a line of over 2600



items, largely manufactured in M.S.A.'s own plant,

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give the M.S.A. Man



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Call the M.S.A. man on your every safety problem . . . his job is to help you.

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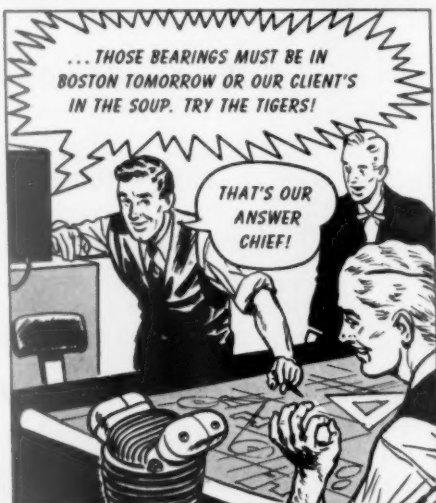
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**Ervin Manske
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CHALMERS**

General Traffic Manager
saves some
Boston bacon

THIS IS A TOP
EMERGENCY, BOB!

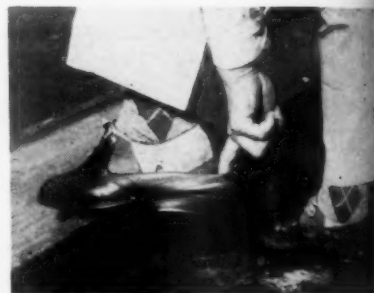


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**Heavy Duty Drill Is
Lightweight, Compact**

A heavy-duty pneumatic drill, made by Mall Tool Company, 7725 S. Chicago Ave., Chicago 19, Ill., is described as specifically constructed for heavy duty operations with maximum power on continuous runs. It is lightweight and compact in design. The contoured pistol grip, trigger throttle and built-in speed regulator combine for efficient, easy handling. It has its own built-in oiler and all moving parts glide on precision ball bearings. The drill measures 6-13/62" long, 2-1/16" wide, 6 1/2" high and weighs only 3 lbs. It comes with a 1/4" Jacobs chuck, key wrench, and hydraulic fitting and a 1/4" by 8" air hose and lubricant.

**Industrial Overshoes
of Neoprene Rubber**



Tingley Rubber Corp., 903 Ross St., Rahway, N. J., has industrial overshoes made of neoprene rubber, for men who work around oils, solvents, acids and other chemicals which damage ordinary rubbers. Neoprene's resistance to oils and chemicals makes the new overshoe suitable for oil refineries, paper mills and many other industrial locations. The overshoes are unusual in that they have no fabric lining making for lightness and comfort without sacrificing durability. Elimination of the liner also allows the uppers to stretch, permitting use for street and work.

Taps For Unified Threads

The greatly increased adoption by industry of the unified screw thread specifications, particularly Class 3B and Class 2B, has created an increased demand for a stock line of ground thread taps with pitch diameters larger than the regular commercial ground sizes. In order to take full advantage of the increased tap wear life possible, through the adoption of the wider unified tapped hole tolerance, Pratt

(Please turn to page 164)

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idea for
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Protects, identifies, displays, sells, dispenses, this H & D patented Duplex box slices dollars off packaging costs and builds dealer goodwill. Get full measure from your next shipping box—send for booklet "Pack to Attract." Hinde & Dauch, 5340-D, Decatur Street, Sandusky, Ohio.

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With Ansul Extinguishers near-expert results are obtained by inexperienced operators. In fact, all Ansul Extinguishers are designed to provide a maximum of extinguishing effectiveness in the hands of inexperienced personnel.

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Send for File No. 841. You will receive a variety of helpful printed matter. Included is our latest catalog which describes Ansul Extinguishers of all sizes — from the small Ansul Model 4 to Ansul Piped Systems and Ansul 2000 lb. Stationary Units.

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(Continued from page 160)

& Whitney, Division Niles-Bement-Pond Co., West Hartford 1, Conn., will furnish high speed steel, commercial ground thread taps made to the new high limit specifications (CGH) in the styles and sizes specified in their Catalog #17.

Hangers Give Constant Support For Steam Piping, Etc.



Constant support that is mathematically perfect for all positions of travel for high temperature process and steam piping is supplied by constant support hangers, made by Grinnell Co., Inc., 260 West Exchange St., Providence 1, R. I. Their design permits 10% increase or decrease in their loads by field adjustment of a single bolt, without impairing their constancy. Three regular frame sizes providing maximum travels of 4", 8" and 12" will take care of all loads from 40 to 9,304 lb. The hangers are non-resonant and in combination with the use of anti-friction bearings, friction has been reduced to a minimum.

Maintenance Machine Does 3-Way Cleaning Job

Plant maintenance costs are said to be cut by a 3-way job maintenance machine made by Wilshire Power Sweeper Co., Glendale, Calif. It not only sweeps mechanically 6 to 15 times faster than a man with a broom, but it also provides a suction system for picking up dust and dirt in out-of-the-way places, as well as a blower system for blowing down dust from machines and other equipment. This gives the maintenance man a complete tool not only for sweeping but for picking up accumulated dust and dirt in stock bins or on lighting fixtures, etc., and for removing and picking up chips and cuttings in or under machinery.

TOWEL COSTS TAKE NOSE-DIVE

WITH

NIBROC[®]



Because they dry drier, faster... there is less waste. No need to reach for a second towel.

Annual towel costs come down with a bang!

For superior absorbency, strength, softness, specify Nibroc towels—world's largest selling towel for industrial and institutional use.

Multifold or singlefold, white or natural. For free washroom posters, samples and name of nearest authorized distributor, write Dept. NG4, Boston.

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COTTER PINS

For cotter pins *sure* to meet your job requirements, specify *Hobbs*. Both extended prong and hammer-lock types are available in steel, brass, stainless steel, and monel. Choose the type that's best for *your* production job.

HOBLOK (Hammer-Lock Type) Cotter Pins

Lock themselves when hit with hammer!

ONLY TWO
OPERATIONS
REQUIRED!



INSERT



HIT HEAD
With Hammer

No bending of prongs is necessary. One blow with hammer on head of pin forces shanks to spread and lock themselves! Easy to remove. Saves time! Speeds production!



LOXIT (Extended Prong) Cotter Pins

... are designed for easier inserting and handling during regular fastening operations. Modern production facilities assure uniform quality.

HOBBS TANGLE-PROOF LOCK WASHERS



These high quality—low cost fasteners satisfy all government specifications. Available in high carbon steel, stainless steels, silicon and phosphor bronze and all types of platings. Tangle-proof construction makes handling easy. Convenient warehouse locations assure prompt delivery.



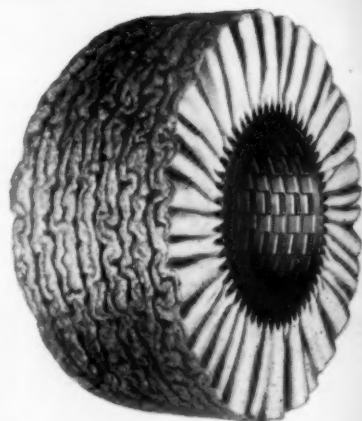
Write for
Hobbs
lock washer
and
cotter pin
price lists
today!

HOBBS MANUFACTURING CO., Fastener Division
10 Salisbury St., Worcester 5, Mass.

Lightweight, Portable, Tubular Masonry Saw

Four models of a new lightweight, easily portable, tubular masonry saw have been announced by Champion Manufacturing Co., 2028 Washington Ave., St. Louis, Mo. One has a 14" blade and is equipped with a 1½ hp motor, while the other has a 12" blade and a 1 hp motor. Two of the models are designed for both dry and wet cutting, while the other two are for dry cutting alone but can be converted to wet cutting, by the addition of a "conversion" kit. They are lightweight (245 lb) and are easily portable. Provision is made for accessory wheels allowing easy movement on the job. The wet cutting models have a self-contained water system.

Automatic Centerless Buffs Feature Buff Ring Construction



A buff ring construction that provides strength, precision and speedy buff assemblies is a feature of the automatic centerless buffs made by American Buff Co., 2414 S. La Salle St., Chicago 16, Ill. The rigid steel ring, which securely grips the buff cloth in its channel, is designed to retain its strength and perfect circumference under the most severe running conditions. Pre-assembly of the buff is speedily accomplished with the use of two tubes, each one welded to the inside of an automatic buff flange. One tube is fitted telescopically into the other, and the set-up of buffs is tightly secured between the two flanges.

New Gasket Materials Compressible, Heat-Resistant

Asbestoprene, a new gasket material developed from asbestos and neoprene, combines compressibility and heat resistance. Because of these two properties the material

(Please turn to page 168)

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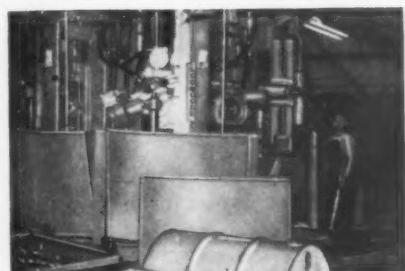
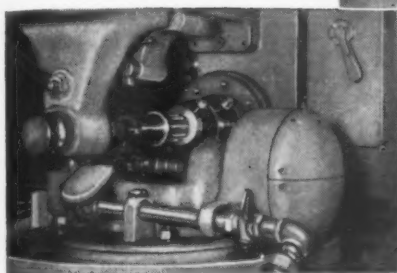
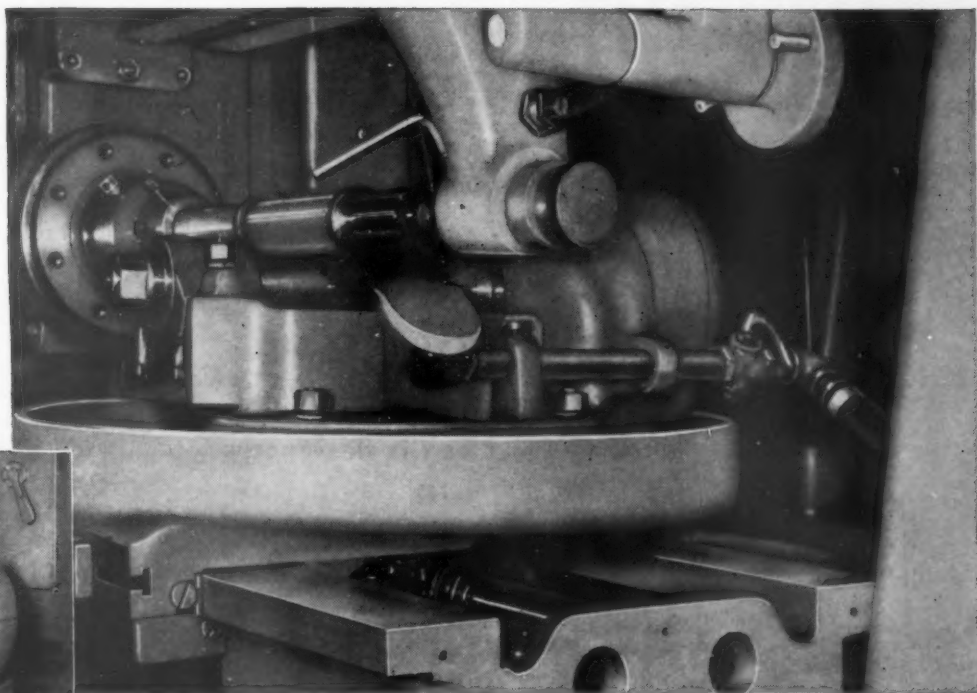
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ASING



"ON-THE-JOB" CUTTING OIL TESTS BY CITIES SERVICE ENGINEERS!

at Timken-Detroit Axle Company

TOOL WEAR REDUCED 25%...MANUFACTURING COSTS ALSO CUT!

In an effort to reduce tool wear and cut manufacturing costs, the Wisconsin Division of Timken-Detroit Axle Company at Oshkosh called in Cities Service Engineers to make "on-the-job" tests.

Cities Service Lubrication Engineers made an on-the-spot study of the Timken-Detroit operation. This "on-the-job" evaluation by skilled Cities Service Engineers, long practiced in solving like problems, resulted in a recommendation for the use of a Chillo Cutting Oil that actually reduced tool wear 25% with proportionate savings in manufacturing costs!

WHAT ARE YOUR PROBLEMS? Why not take advantage of free, "on-the-job" testing? Call for our lubrication engineers at the office nearest you, or write Cities Service Oil Company, Dept. D31, Sixty Wall Tower, New York City 5, New York.



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APRIL, 1953

Please mention *PURCHASING Magazine* when writing to advertisers.

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NUTS BOLTS SCREWS WASHERS



easy on the eye...

ATLAS' new two
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box is designed
with you in mind.

FREE!

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Decimal Calculator
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Easy vision labels that are
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THE CINCINNATI GEAR COMPANY

"Gears... Good Gears Only"

Wooster Pike and Mariemont Ave. • Cincinnati 27, Ohio

(Continued from page 166)

fills a gap in gasketing materials between compressed asbestos sheet and cork or rubber. It is more compressible and more heat resistant than glue-glycerin treated paper and, in addition, has much better dimensional stability. It does not cause corrosion of light metals and is resistant to oils, water, gasoline and antifreeze solutions. Its compressibility is 1500 psi minimum in the machine and 500 psi minimum in the cross machine direction. It is made by Victor Mfg. & Gasket Co., Chicago, Ill.

Small, Powerful Electric Motor

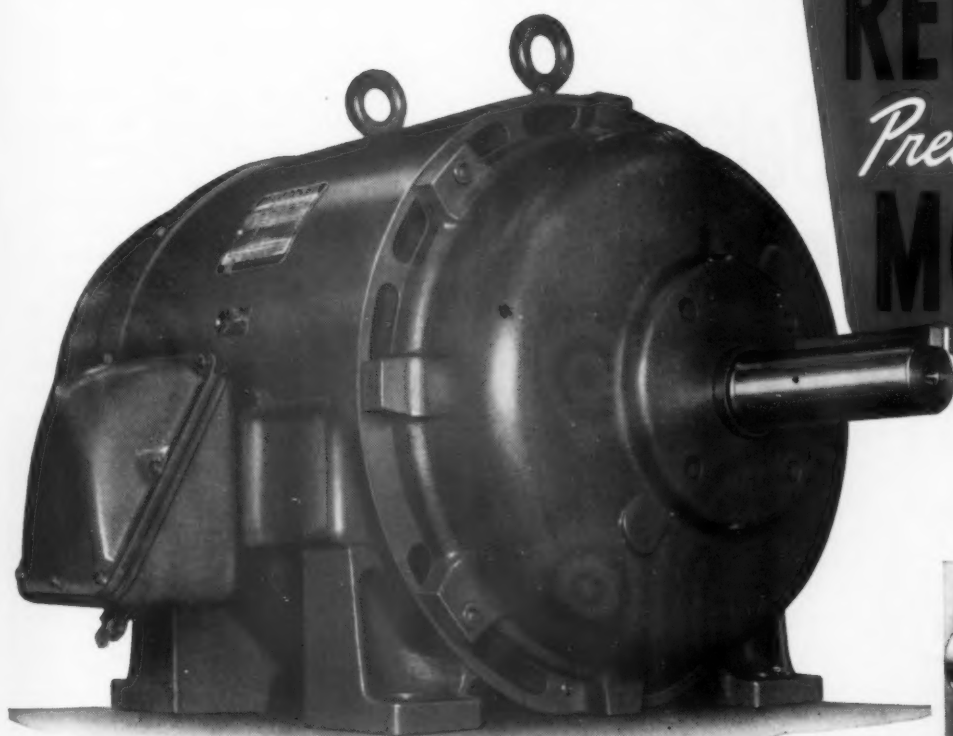


Connecticut Telephone & Electric, Meriden, Conn., calls this one of the smallest and most powerful electric motors ever manufactured. It measures only 1" x 1 1/8" x 2 1/2". Two models are available with exacting speeds of 8,000 rpm or 12,000 rpm. Power and performance of these small units—small enough to fit into a watch pocket—are said to be so good that currently almost all the production is being used by the armed forces for highly technical needs.

Self-Feeding Grease Cup Cuts Material and Labor Costs

A new automatic self-feeding pressure grease cup is said to reduce labor and material costs. Position of the cup on its stem indicates the amount of grease in it. It increases the daily production of machinery by the elimination of "down-time" for daily lubrication, because one filling of the grease cup efficiently lubricates for several days. The grease cup keeps the entire bearing area constantly filled with grease, thus keeping out all lint, ink, moisture and dirt and giving the user maximum protection against excessive bearing wear. It is applicable on every type of machinery. The manufacturer is A. L. Watson Co., 38 Crown St., Milton 87, Mass.

DEPENDABLE...because they're ENGINEERED FOR RUGGED SERVICE



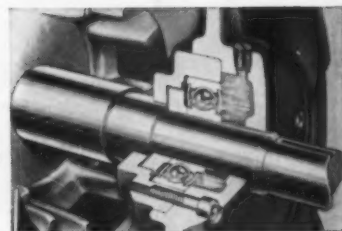
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Precision-Built
MOTORS

Reliance Totally-enclosed Fan-cooled A-c. Motor. All other standard enclosures available, with wide choice of mechanical designs and special mountings. Ratings from $\frac{1}{4}$ to 300 hp.

Rugged Reliance A-c. Motors are proving that "All Motors Are NOT Alike" on grueling jobs in every industry. Heavy shafts, bearing to bearing—indestructible pressure-cast aluminum rotors—shock-resistant frame and bearing-bracket construction—man-sized conduit boxes—pressure-welded core laminations—and tough Reli-X insulation are among the many features that make these motors the most dependable, most economical that you can buy.

To see for yourself why these better motors will perform better on *your* job, call an Application Engineer at the Reliance Sales Office nearest you.

B-1452



WHY THE RELIANCE PRE-LUBRICATED BEARING DESIGN IS BEST

The Reliance pre-lubricated bearing provides *four times more operating hours without re-lubrication* than any other bearing used in motors today. And—whatever your lubrication schedule—you *just can't grease 'em wrong!* To get the complete "inside story" on motor bearings, write today for Bulletin B-2201. It contains hard facts on the advantages of the Reliance pre-lubricated bearing design, with cutaway view, cross-section diagram, comparison chart, and statements by bearing manufacturers.

RELIANCE ELECTRIC AND ENGINEERING CO.

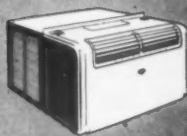
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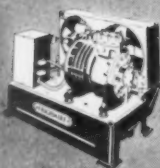
Self-Contained
Air Conditioners



Central System
Air Conditioners



Room Air
Conditioners



XD Meter-Miser
Compressors



Ice Cube Makers



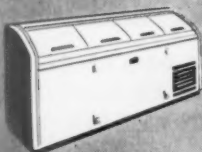
Reach-In
Refrigerators



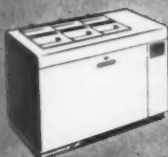
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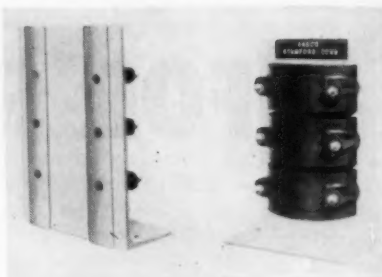
Call the Frigidaire distributor or Factory Branch that serves your area. Or write: Frigidaire Division, General Motors Corp., Dayton 1, O.



FRIGIDAIRE

the most complete line of refrigeration and air conditioning products in the industry.

New Device Automatically Separates Steel Sheets



Automatic separation of steel sheets of any shape, is possible with a device made by Basco Manufacturing Co., 5 Woodside St., Stamford, Conn. Employing the magnetic principle that like poles repel one another the unit comprises a permanent magnet that induces a magnetic field in the stacked steel sheets. They tend to repel each other, causing the ends of the sheets to fan out with air space between them. No matter what the coating on the steel sheets—oil, grease, etc.—the separator will “float” each sheet, simplifying the feeding of presses, brakes, shears, etc.

Lubricator Gives Fine Oil Flow at Low Air Flow



C. A. Norgren Co., Englewood, Col., has a Micro-Fog Lubricator for bearings, spindles, gear boxes and small air-powered devices. It is said to produce an extremely fine and uniform oil fog at low air flow. A constant oil level assures a uniform rate of oil feed and there is 360 deg visibility of the oil flow. Oil delivery into the flow line can be accurately metered to as little as 1 drop in 20 minutes by means of air control. There is uniform distribution of oil fog to multiple outlets. It is for 1/4" air lines. Rated air requirements from 0.8 cfm at 10 psi to 6 cfm at 80 psi.



Super Measurements for All Departments



The versatile Brown & Sharpe Electronic Amplifier provides easily taken uniform, precision measurements for production, inspection, and laboratory . . . with readings in .0001" to .00001".

You simply "plug-in" its various measuring devices. Can be set-up to measure work in a machine, on a bench, or in special gaging fixtures. Allows you to specify and hold closer working tolerances in all departments. Write for Catalog describing applications. Brown & Sharpe Mfg. Co., Providence 1, R. I., U. S. A.

Buy through your local Distributor.

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Save Money Thru Glove Salvage!

Whitney Says:



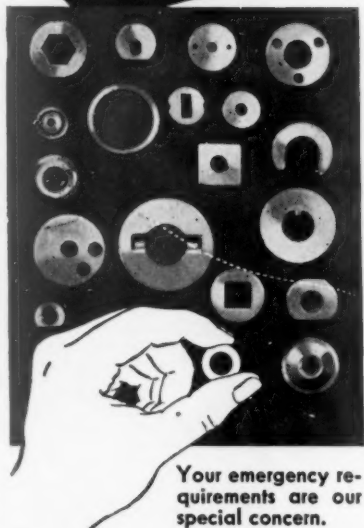
Stop throwing money away—as King Wrong is doing! Worn gloves of all types can be salvaged by your industrial launderer at a fraction of new glove cost. After the special salvage process they're soft, clean, sterilized, repaired—free of accident-inviting holes and rips. For information on glove salvage write to:

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Your emergency requirements are our special concern.

STEEL WASHERS FOR EVERY NEED

A DEPENDABLE SUPPLIER
FOR 38 YEARS . . .

Your requirements for standard and special steel washers are sure to be satisfied at Joliet. A bank containing thousands of special dies in many shapes and forms, 9/32" to 8" O.D., gauges No. 28 to 3/8", stands ready to answer your needs. A VARIETY OF FINISHES IS AVAILABLE to meet your special needs, including: Electro-plating, Galvanizing, Parkerizing, and Cyanide hardening.

After All!

THERE'S NO SUBSTITUTE
FOR QUALITY AND SERVICE

**203 CONNELL AVE.
JOLIET, ILLINOIS**

**JOLIET
WROUGHT
WASHER CO.**

Also Noted . . .

Floors can be more attractively maintained with a newly introduced transparent plastic floor finish which is said to be 100% non-skid. It is a colorless liquid and when applied with a mop it forms an attractive, semi-gloss, non-glare finish that lasts three to four times as long as wax. Made by The Monroe Co., Inc., 10703 Quebec Ave., Cleveland 6, Ohio.

The density of flowing liquids can be continuously indicated, recorded, and controlled by means of the Princo Desitrol, made by Precision Thermometer & Instrument Co., Philadelphia, Pa. It is available in a number of models, the most basic of which offers direct sight readings of liquid density at the pipe-line point of sampling.

Holders of diamond tools available from Diamonds and Tools Inc., 19345 John R. St., Detroit 3, Mich. are surfaced with an oxide coating that resists corrosion, thereby avoiding rust which occurs on conventional uncoated holders when held in stock or subjected to the action of corrosive coolants. They cost no more than uncoated holders.

Speeds of d-c motors up to 200 hp and voltage of generators up to 300 kw can be adjusted with a new motor-operated rheostat, which uses a snap-action switch. Two cam-operated switches are supplied with each unit. Each cam is adjustable over a 360 degree range from the front of the rheostat. Made by Westinghouse Corp., Box 2099, Pittsburgh 30, Pa.

Rubberhide Co., Inc., 706 Whitehead Road, Trenton 4, N. J., says its puncture-proof safety innersoles prevent injury by nails, etc. The innersole is made of a thin, flexible sheet of high-tensile spring steel, inseparably bonded to a layer of top grade sole leather on the upper side and rubber impregnated canvas on the under.

Metalcraft Inc., Mason City, Iowa, has two new types of adhesive-backed inventory control and equipment identification plates. Users can quickly match written records with serially numbered plates affixed

(Please turn to page 176)

free!



This 12-page, 8½ x 11-inch illustrated booklet that explains, in complete detail, how you can simplify and save with

PURE OIL INDUSTRIAL LUBRICANTS



Pure Oil specializes in top-quality *multi-purpose* oils and greases—each one designed to do a number of *different* jobs instead of just one specific job. And do each job *equally well*.

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Industrial Sales Dept. P-34

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Buy More
Non-Ferrous
Metals
From
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Than
From Any
Competing
Smelter



Federated Metals Division, American Smelting and Refining Company
120 Broadway, New York 5, N. Y.
In Canada: Federated Metals Canada, Ltd., Toronto, Montreal

(Continued from page 174)
to furniture, fixtures and equipment. The adhesive permanently adheres to any grease-free surface.

Industrial **safety signs** printed on heavy fabric with self-adhesive backing have been introduced by Westline Products Division of Western Lithograph Co., 600 E. Second St., Los Angeles, Calif. The signs will stick to any smooth, clean surface permanently and eliminate the necessity of bolts, nails, screws or drilling. They may also be removed without harming the surface.

Armstrong Cork Co., Lancaster, Pa., has developed a new **plastic coating** for use both as protection and color identification on insulated refrigerant, cold water, steam and other lines and insulated equipment. It can be applied by brush or spray and will withstand temperatures of 160 F without cracking. It is available in white and six colors.

The fabrication of **ring shaped parts** which traditionally have been cut out of solid bars or special forgings can now be speeded up. Crucible Steel Co. of America is marketing hollow bars of tool steel to replace conventional material. Parts made from the hollow bars can be produced more economically because the fabricator by-passes the machining of central areas. Sizes range from 2" round with a 1" hole to 16" round with 12" hole.

A solvent phosphating **cleaner**, known as Solo-Phos, is said by the manufacturer, Whitfield Chemical Co., 14225 Schaefer Highway, Detroit 27, Mich., to be a three-in-one cleaner. It removes grease and tar; cleans off chips, and gives a rust-inhibitive phosphate coating. Used for one-step cold cleaning and phosphating of ferrous metals, aluminum and zinc, it reacts with organic or metallic soils.

A new tool has been introduced into the U. S. Fuller & Hallman Inc., Moro, Ore., offers an imported **open end wrench** which automatically adjusts its jaw size. It takes the place of a whole set of ordinary wrenches. Known as the Plattina Self-Adjusting Wrench, its jaws will handle any nut from 1/4" to 1 1/4". The head of the wrench rotates approximately 130 degrees on end of handle.

CLASSIFIED SECTION
SEE PAGE 380

Office Equipment and Supplies section of PURCHASING Magazine

APRIL, 1953



Skilled operators in The Prudential Insurance Company of America's new Southwest District home office building in Houston, Texas, use the latest in mechanical office equipment to assure accuracy, which is so important to the intricate business of life insurance.

Waste Paperwork Costs Industry Millions of Dollars Annually

By William G. Hildebrand

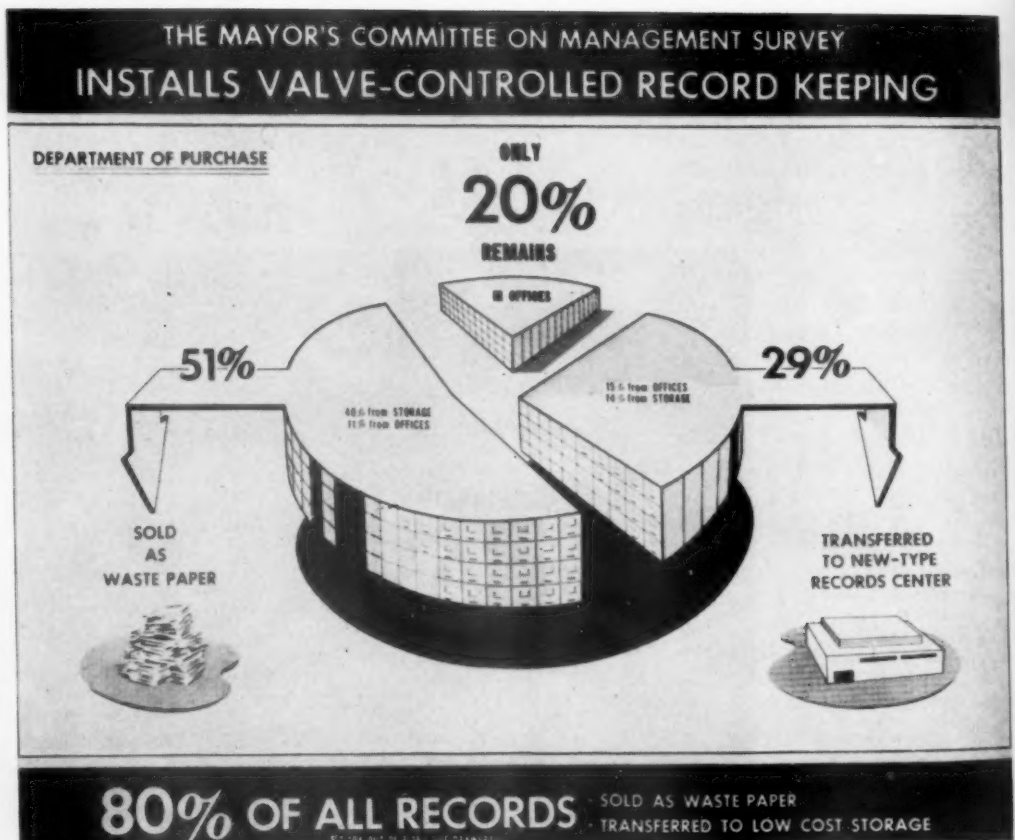


Chart shows disposition of records in New York City's Department of Purchase, following installation of controlled record keeping system by NRMC.

MOST people at some time or other have kidded friends for being "string savers" that is, part of a strange group that refuses to allow a piece of string, regardless of size, to be thrown away. They save all the string they can, knotting the pieces together and rolling them into a large ball that is stuck away in a drawer or cupboard to be used in emergencies that seldom arise.

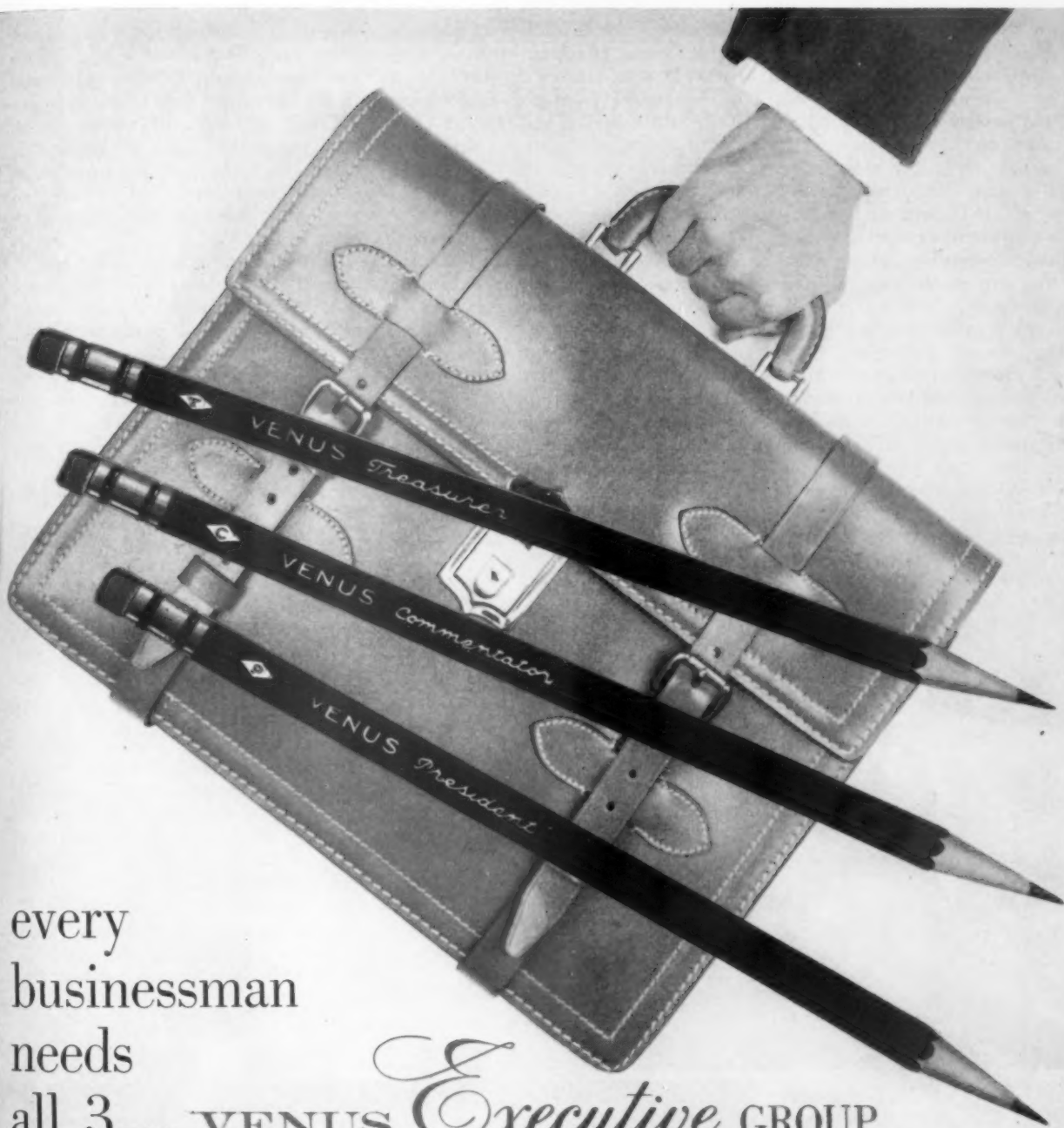
However, in American business today a new legion is forming that

may rightly be called "paper savers." Members of this new group that have laughed at "string savers" could find a bigger and better laugh at their own expense—if they could afford it—by making a thorough study of their own paper-saving habits. They'd find their files filled with letters, records, forms and various other papers, often saved in duplicate, triplicate and quadruplicate. They'd stop laughing, however, when they realized the cost to them of creating, distributing, filing

and storing these pieces of paper, and how much of this cost was unnecessary and wasteful.

American business today is being swamped by an avalanche of one trillion pieces of paper, occupying office space valued at \$150 million a year, and storage space outside offices that costs \$150 to \$250 million annually.

This is the estimate made by Emmett J. Leahy, president of National Records Management Council, who directed the Hoover Commission Task



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businessman
needs
all 3... **VENUS** *Executive* GROUP

3 pencils...the finest ever made...to fill the executive's 3 writing needs

Have you ever stopped to think how many *kinds* of writing you do? We have and the result is the Venus Executive Group... three pencils designed to fill the business man's three writing needs. There's the Venus *President* for notes, memos, medium writing... the Venus *Treasurer* for sharp, clear figures, fine writing... the Venus *Commentator* for comments, directives, extra-bold writing.

We've made these the very finest pencils possible, too... with the finest lead, homogenized to give you a silky, smooth-flowing point. Even the eraser is so efficient it's a pleasure to make a mistake! Get the only pencils in the world designed for the busy executive... the Venus EXECUTIVE GROUP... into *your* office today.

For free Venus Executive Case, containing all 3 Executive Group pencils, write on your letterhead to:

AMERICAN PENCIL CO., HOBOKEN, N.J., MAKERS OF FAMOUS VENUS PENCILS AND VENUS PENS



Force on Records Management. He goes further by stating that 95% of all corporate paperwork that is filed is never referred to. About 40% of all filed papers—that's 400 billion pieces, can be burned or sold as waste paper with business never faltering a step. The remaining 60% can be divided between on-the-premise current files and new-type record storage centers, where documents that are stored can be made readily accessible.

These somewhat startling claims have been borne out many times while the National Records Management Council has been installing modern records management systems in many top industrial corporations and large municipal governments. NRMC was conceived in 1946 by the American Historical Society as a non-profit service or-

ganization for American business on problems affecting business records. It was started in 1947 by a \$35,000 grant from the Rockefeller Foundation and is supervised by a board of trustees made up of leading archivists, economists and historians.

The National Association of Purchasing Agents has long recognized the problems accompanying orderly retention of essential purchase records and has offered suggestions to its members to help them determine which records to keep and for how long. The suggestions are all based on one fundamental policy: To review each record according to its function and determine from that its importance as reference material.

The problem of eliminating waste paperwork is huge, and before un-

dertaking it, management must consider the effect of all other activities upon record making, and control the creation, use, location, housing and retention of records from birth to death. Also, arrangements must be made for the protection of vital records against enemy action, fire, flood or any other disaster.

In making its studies and installations NRMC starts with the basis that all paperwork costs time, money, space and equipment, and sets about to find ways of reducing or eliminating these costs.

This is done in four fundamental steps covering an organization's entire paperwork system. These steps are:

1. Eliminating the creation of unnecessary papers.
2. Streamlining the remaining necessary paperwork.
3. Retaining papers only as long as they are needed, and keeping them where they are needed. That is, in current office files or storage centers.
4. Creating new-type records storage centers.

As an example of the savings resulting from the elimination of unnecessary papers, NRMC points to its work in the City of Detroit's Public Welfare Department. Here, a study of papers in files and in current use made it possible to eliminate the filing of 140,000 pieces of paper annually. In addition, 20,000 letters annually are no longer typed; 20,000 cylinders formerly used for

(Please turn to page 194)

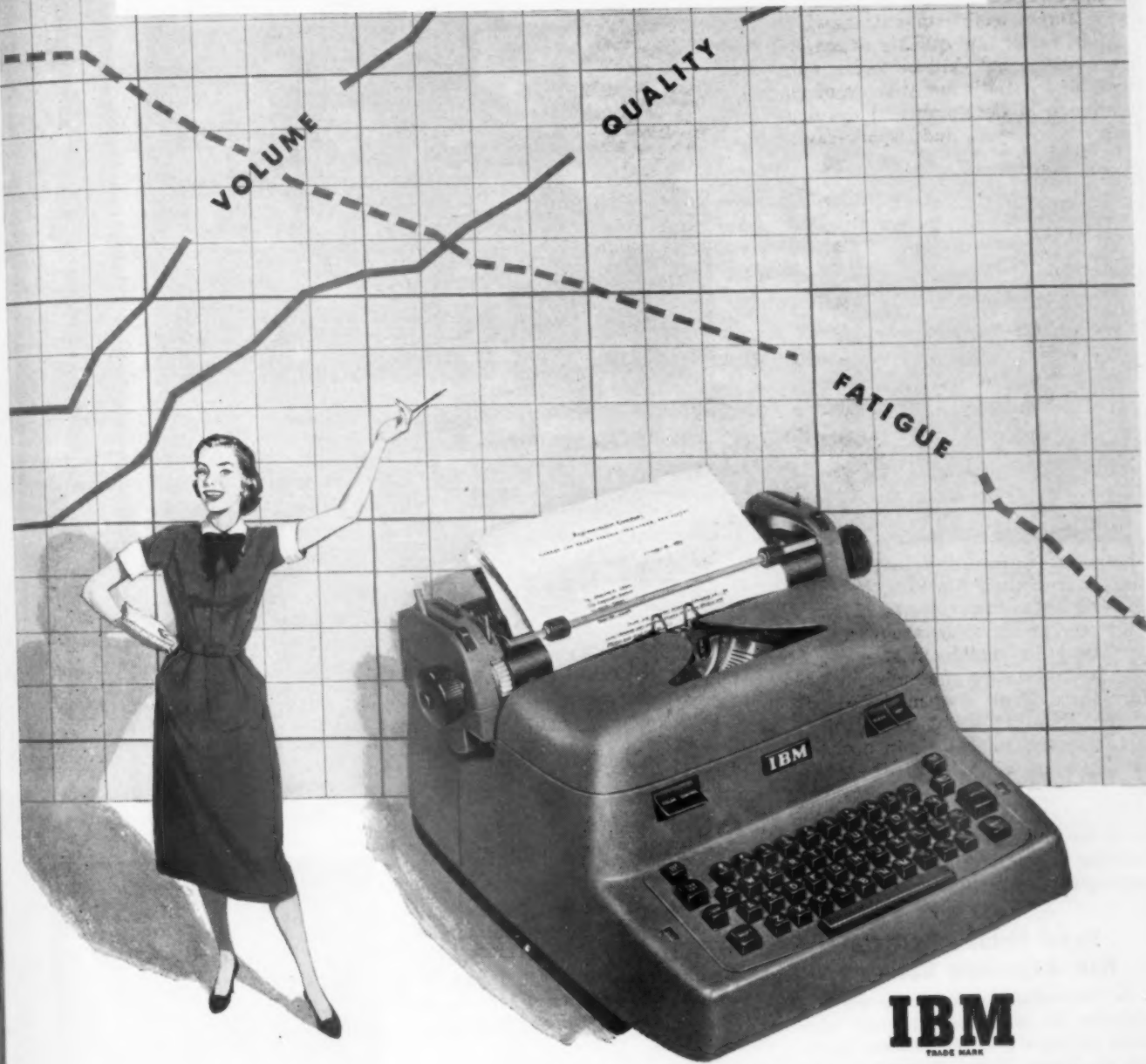


Photo above shows how records were stored by large industrial organization before complete records management system was installed. Filing was haphazard, making important records hard to find when needed. At right is Business Archives Center, New York City, which supplies ready reference to stored records at a cost of 33 cents per 1,000 documents per year.

★



You can see the difference



Up, goes the volume of typewritten work produced in your office when you start using IBM Electric Typewriters.

Up, too, goes the quality of the work . . . the neatness, clarity, and legibility of both originals and carbon copies.

Down, go mid-morning slump and end-of-the-day fatigue, with their slackened pace and costly errors.

These are the reasons why so many companies are rapidly changing over to IBM Electric Typewriters. Isn't it time you asked for a demonstration?

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TRADE MARK
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INTERNATIONAL BUSINESS MACHINES

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590 Madison Ave., New York 22, N. Y.

- ☐ Please send illustrated folders on IBM Electric Typewriters.
☐ I'd like to see the IBM Electric Typewriter.

Name _____
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New Packaged Office Line Developed by Arnot & Co.

Partition-ettes, a new line of packaged private offices, has been introduced by Arnot and Company, Inc., 922 Park Avenue, Baltimore 1, Md. The new line of offices, which can be easily and quickly assembled without special skill or tools, is the result of Arnot's many years of experience in designing and developing functional and space-saving



shipboard furniture, exemplified in the S. S. United States.

Designed to fit practically all office partition needs they are available in wood to match most popular styles and finishes of standard office furniture. They are made in six stock lengths and three stock heights, with top panels in a choice of matching wood, glass or Corrugated.

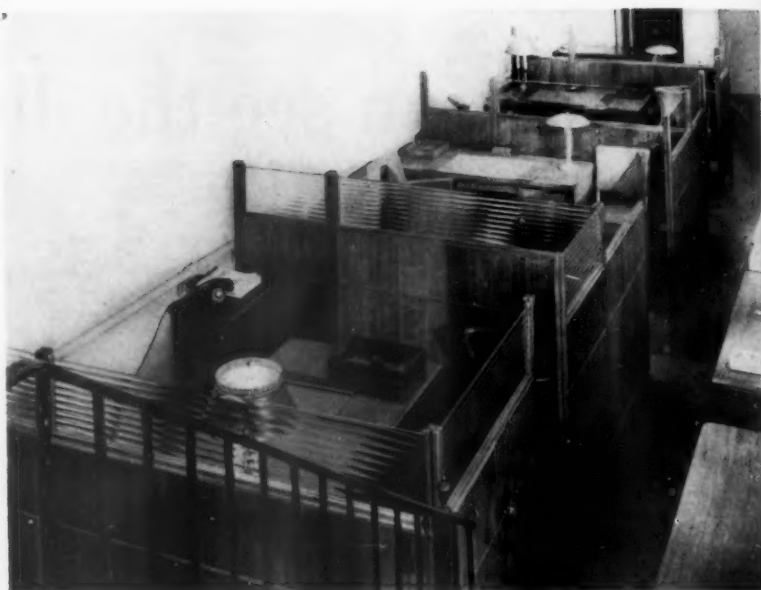
They create private offices in large areas without changing basic lighting or ventilating, or disturbing permanent walls and floors.

Royal Metal Introduces New Adjustable Bookcase

A three-shelf bookcase, easily adjustable to accommodate any size book or report, is the newest product of Royal Metal Manufacturing Company, Chicago, Ill. The gray metal bookcase has been designed for purchasing agents, office workers and others requiring ready access to reference materials. Made of heavy gage steel, the bookcase has exceptional strength and capacity and uses a minimum of floor space.

Birkenstock Named To New Post With IBM

International Business Machines Corporation, New York City, has announced the promotion of James W. Birkenstock to the position of director of product planning and market analysis.



Kybernetes Now Handling Equipment Manufacture

A new category of methods, regulating and control equipment, including business machines, television camera systems and electronic switches, developed by the Self-Winding Clock Company, Brooklyn, N. Y., will now be manufactured by its new division, The Kybernetes Corporation, 9 East 40th Street, New York 16, N. Y. The business machines automatically classify, compute and address by high-speed television techniques from self-coded, typed cards.

Royal Designs Adjustable Typewriter Desk and Chair

An adjustable typewriter desk and chair have been developed expressly for high schools and commercial colleges by the Royal Metal Manufacturing Company, Chicago, Ill. This marks the company's re-entry into the school equipment field after two decades.

Underwood Distributing New Punched Card Line

Underwood Corporation, 1 Park Avenue, New York 16, N. Y., has entered the punched card accounting field this year with the introduction of a complete line of equipment of advanced design. The machines are unique with cards of three different sizes, one of which is smaller than 2" x 3".

Arrangements have been made with Powers-Samas Accounting Machines, Ltd., of London, a subsidiary of Vickers, under which Underwood will distribute and service Samas products in the United States,

Canada and other parts of the Western Hemisphere. The equipment distributed by Underwood will be marketed under the trade names "Underwood" and "Samas."

Equipment includes a complete line of automatic key punches, automatic verifiers, reproducers, interpreters, interpolators, sorters and tabulators. A complete line of equipment is available for a 40-column capacity card which measures 2" x 4.687" and a still smaller card with 21 columns measuring 2" x 2.750".

Talk-A-Phone Introduces New Redi-Power Unit



Talk-A-Phone Company, 1512 So. Pulaski Rd., Chicago, Ill., has introduced its new 20-watt Redi-Power Talk-A-Phone, featuring a base-board mounted power supply. The power supply eliminates the need for a separate booster or paging system and does away with the need for a larger cabinet. The new model retains the compact size and modern styling of the Talk-A-Phone line, with the power supply housed in a small crackle-finished louvered unit installed out of sight but available for ready use.



quality is steel . . . *gloved in style*

True style comes from thoughtful, progressive design and quality construction. "Y and E" gives you these in unusual measure.

And "Y and E" desks are practically "fashion proof." Finished in Neutra-Tone Gray, they will be handsome in your office decor today—and tomorrow—and in years to come.

YAWMAN and ERBE MFG. CO. • Rochester 3, New York

Steel Desks and Files, Filing System Supplies.



Nationally distributed through branches, agents and dealers.

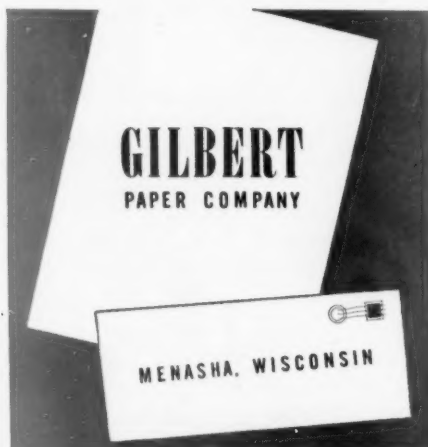


Due in the morning, and the last minute rush wasn't all Fred's fault. The reports he depended on from other departments were late, too.

Gilbert ledger papers help eliminate time-consuming annoyances . . . hard-to-read erasures, dog-eared ledgers and floppy sheets that won't stand up in files. Gilbert ledger papers are made with new cotton fibres for strength. Then, too, they are tub-sized, air-dried, permitting neat erasures and providing a superb writing surface. Ask your supplier for samples.

Dreadnaught Ledger . . . 100% new cotton fibre
Old Ironsides Ledger . . . 75% new cotton fibre
Dauntless Ledger . . . 50% new cotton fibre
Gilbert Ledger . . . 25% new cotton fibre

GILBERT . . . America's most complete line of quality business papers



Pitney-Bowes Exec Tells Ways To Cut Office "Manufacturing" Costs

The increasing paper-work of modern business is "no more, no less, than a manufacturing job" and its "vast hidden costs" can be cut by machines in the same way that industry uses machine tools, Harry M. Nordberg, vice president for sales and service of Pitney-Bowes, Inc., Stamford, Conn., declared recently.

Addressing the New York Office Appliance Managers' Association at a banquet honoring the leading office equipment salesmen of 1952, Mr. Nordberg said:

"Throughout the office, we manufacture. We manufacture a letter, a statement, an invoice, a result of some kind. We manufacture duplicate copies. We manufacture addressed envelopes and other repetitive information. We manufacture records. And the sole purpose of the business machines industry is to cut those office manufacturing costs just as machine tools in the plant cut product manufacturing costs."

Stating that the low birth rate in the 10 years prior to 1940 has created a "terrific shortage of office workers," Mr. Nordberg said the shortage will continue "for perhaps another five years, and in that period our opportunities for furthering the education of business in the use of

office equipment will reach a new peak."

"To do that job," he said, "we must emulate the successes of machine tool manufacturers. The machine tool industry has done an outstanding job in proving to top management that a machine costing \$15,000 to \$25,000 is a good investment if it cuts a few pennies cost off a manufacturing operation. The plant manager finds it a breeze to sell top management on a \$250,000 equipment budget. But, at the same time, the office manager sweats and strains to get a small percentage of that amount for his yearly needs. "Why has mechanization proved easier to sell in the plant than in the office? To my mind there are two answers. First, we must do a better job in convincing management that there are vast hidden costs in general clerical tasks, and that these tasks can be done better, faster, and at less expense by business equipment. Second, since management men accept the fact that manufacturing costs can be cut, then we must show them that office work is no more, no less, than a manufacturing job."

At the same time, he pointed out
(Please turn to page 190)



Miss Millionth Victor, otherwise known as Jo Hoppe and the current Miss Chicago, beams her approval of the millionth Victor adding machine as she inspects it at Victor's Chicago plant with Carl Buehler, left, executive vice president, and A. C. Buehler, Jr., vice president. The machine is on display and is currently running an endurance test to see how high an adding machine will count before repairs are required. Visitors are invited to guess what the number will be and the closest guess will win a duplicate of the machine.

ONE RECORD CONTROL IN PURCHASE FOLLOW-UP NO REMINDER TICKLER SYSTEMS NEEDED



A fact recognized and mutually agreed upon by all purchasing agents, is this: a purchase order placed is of no value until the order is acknowledged and the material received. That is why more and more purchasing departments are searching for new and better ways to make purchase order follow-up easier, faster, and more efficient. The need for such methods, especially in plants with both military and industrial demands to meet, is extremely urgent.

One of the most effective systems yet developed to follow up purchase orders and help insure maximum factory production, is the new "single source" VISIrecord visible vertical system. According to reports of Purchasing Agents at the Bausch & Lomb Optical Company, Bell Aircraft Corporation, Chevrolet-Tonawanda, Marshall Field & Company, Moore Business Forms, U. S. Graphite, and others, the VISIrecord method has been applied with remarkable results, in time saved, greater efficiency, economy and reduced personnel turnover.

Instead of depending upon several

copies of the original purchase order, filed in different units, the VISIrecord system controls purchase follow-up through one record card obtained as a "by-product" of order writing. This card, which can be created as a copy of a multiple-copy carbon interleaved set, or as a copy of any duplicating system, is placed in a specially designed VISIrecord unit. It can be filed in any sequence desired—by vendor and order number, or merely by order number. Because of the unique "three-dimensional" control feature, the name of the Vendor, the Purchase Order Number and the Follow-Up date are always instantly visible on every open order filed. Leafing through filed copies of orders and consulting separate memo pads is eliminated. Instead, sight-scanning of rows of cards, using the visible margin signals, is accurate and fast, and permits control at the rate of 10,000 to 12,000 records per hour. Every control element is always completely visible.

All operations related to follow-up are also faster and simpler, and leave less room for errors and duplication. Post-

ings of acknowledgments and promises, change notices, partial shipments and follow-up notations are all expedited by the "finding" speed and ease obtained only through the VISIrecord method. Purchasing Agents advise that this method is 35% to 50% faster than other systems used.

An interesting and important aspect of all VISIrecord systems, whether they are tailored for Inventory Control, Production Control, Credit Operations, etc., is that wherever such an installation has been made, operating along with other systems, clerks have actually competed with each other for the "choice" assignment of the VISIrecord units. They have found the work easier, less tiring, more accurate, more satisfying. The advantages to management of having such a wholesome personnel attitude toward the job are obvious and immeasurable.

For further information on Purchase Follow-Up, and for a free survey of existing operations with no obligation, write to VISIrecord, Inc., Dept. P, Copiague, L.I., N.Y.

Advertisement

THE PEN THAT FILLS ITSELF

Finger grip never touches ink. No chance for ink to touch you.

CHOOSE the right point for the way you write—by number.

Fountain base "ink-locked" against accidental spillage. Only the pen unlocks the ink.

Fountain base holds 40 times more ink than ordinary fountain pen. Won't leak. Won't flood. Easy to clean as a saucer.

MODEL
444



This desk pen has the fountain in the base instead of the pen barrel. Pen instantly fills itself every time you return it to the socket. Pen always ready to write—writes 300 words or more without redipping.

Ask your stationer for a demonstration

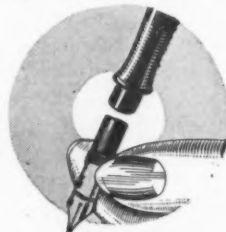
Esterbrook®

Desk Pen Sets

THE ESTERBROOK PEN COMPANY, CAMDEN 1, NEW JERSEY
The Esterbrook Pen Company of Canada, Ltd.,
92 Fleet St., East; Toronto, Ontario



Only a few of the more popular point styles shown.



TO SELECT OR REPLACE
... HERE'S ALL YOU DO

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THE ESTERBROOK PEN COMPANY

(Continued from page 188)

that the cost-saving performance of modern business machines has already provided large revenues for the office equipment makers. The industry's income in 1949, the last year of normal selling before Korea, he said, exceeded one billion dollars, making it one of only 21 industries whose annual income totaled that much. Its earnings that year were greater than those of such industries as motion pictures, meat packing, printing and publishing, radio and television, rail equipment and distilling.

1 1 1

New Drafting Table By Tectonic Services, Inc.



A new drafting table designed to provide greater comfort and efficiency for engineers, architects and draftsmen is now available at about half the price of conventional drafting tables. The most outstanding feature of the new Tec-Table is that it can be used with an ordinary chair. The edge of the table top closest to the draftsman is only 30½" above the floor in its lowest position. The table top also adjusts to the same height as other drawing tables and can be made level at a height of 41" above the floor. The table top is 3' x 6', with an anodized aluminum molding providing a straight, true edge to guide the T-square. Tec-Table is manufactured and distributed by Tectonic Services, Inc., Cleveland, Ohio.

1 1 1

New Line of Faymus Stamping Pads Introduced

Bankers & Merchants, Inc., Chicago, Ill., has introduced a complete line of stamp pads under the Faymus brand. The new pads, which are available with either foam rubber or standard felt construction, have large capacity ink reservoirs and will serve for many thousands of stampings. The pads are packaged in boxes which carry the Faymus design and are individually wrapped in cellophane. They are available in all standard sizes.

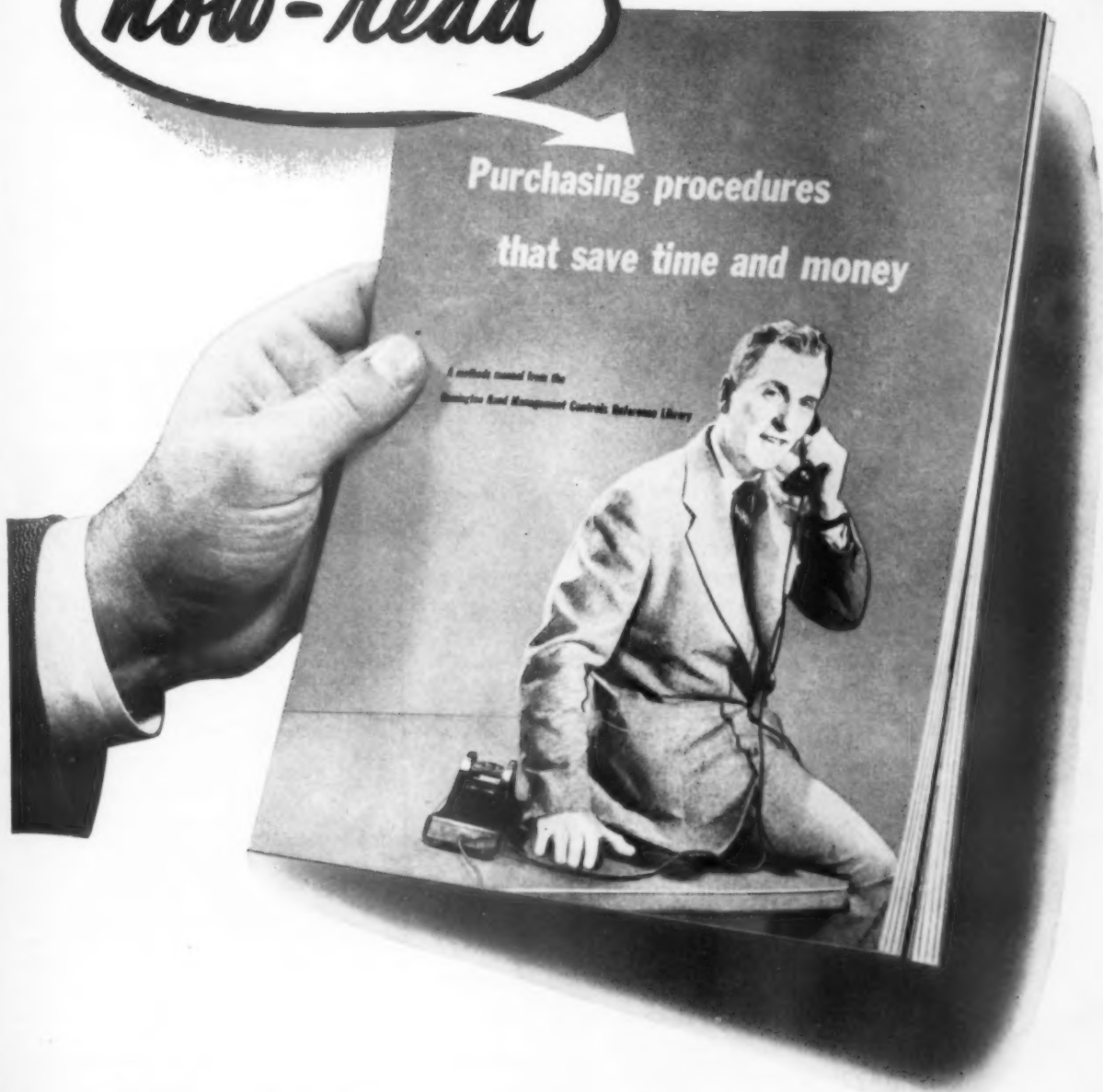
What's your purchasing problem?

— longer lead times?

— expediting?

— follow-up?

now-read



Here is a book with a NEW approach, with answers as timely as today's purchasing problems. Here too, are methods time-tested by leading purchasing officials — methods *proved* profitable over the years — with case histories to illustrate.

Today's successful purchasing executives must have time for planning — therefore, must find a system that gets time-eating routine work done accurately and swiftly. Methods Manual X-1202 points out tested ways to reach this objective. Don't delay; mail the coupon *now* for your copy.

Remington Rand

Room 1865 Management Controls Library
315 Fourth Avenue, New York 10

Yes, I would like a copy of "Purchasing Procedures," X-1202.

Name

Firm

Address

City Zone State

plenty sharp boss!**



*** His employees say he's "APSCO Sharp,"** because he has conveniently located plenty of APSCO Sharpeners throughout the office. He knows APSCO Sharpeners not only increase "efficiency time" but sharp points insure faster, neater work.

The Dexter Model #3 is ideal for heavy duty office use. It features an all steel frame with a selector type dial. It sharpens all size wood case pencils and the APSCO exclusive positive point stop guarantees a perfect point everytime.

There's an APSCO Sharpener for every pencil sharpening need. Look for the APSCO Trade Mark, it's your assurance of quality.

automatic pencil sharpener co.

336 north foothill road • beverly hills, california
rockford, illinois toronto, canada



DBM Databosser Introduced At Western Metals Show

Business and industry had its first look at a new automatic multiple embossing machine, the DBM Databosser, which was on display at the Western Metals Exposition in Los Angeles, Calif., March 23-27. The machine is manufactured by Dashew Business Machines, Inc., Los Angeles.

Completely automatic, the machine embosses metal addressing plates or property identification tags with serial numbers, part numbers, special coding or repetitive gang-embossed information. The metal plates are automatically fed into the embossing unit, embossed and then filed into the hopper tray at the rate of 90 plates per minute.

1 1 1

New Portable Contact Exposure Frame Being Manufactured By Colwell



Offices and business firms producing their own printed material on small offset duplicating machines are finding that major economies can be made in the preparation of offset plates through use of a new portable contact exposure frame manufactured by Colwell Litho Products, Inc., Minneapolis, Minn. The CoLight exposure frame now being made by Colwell makes it easy to handle the exposing operation on a table no larger than a card table. Both the light source and the contact frame are combined in a single unit with illumination provided by a bank of rapid-starting, black light fluorescent tubes which eliminate the necessity for continual adjustment and replacement of carbon arc sticks. The smallest CoLight unit weighs only 57 pounds and can be connected to any 110 volt a.c. outlet. Larger vacuum frames are available in sizes up to and including units for handling 17 x 22" offset plates.

New Saftee Spindle Eliminates Sharp Points



A new Saftee Spindle has been designed by Smartee Saftee Spindle Company, Detroit, Mich., featuring the elimination of hazardous sharp points. Papers are placed on the spindle by simply pressing the arm above the ball point. The paper then automatically falls to the base. Removal is accomplished by lifting papers over ball point needle or by unscrewing the spindle from the base. It is made of Styron plastic and is available in maroon, black or office gray.

1 1 1

York To Show Map-And-Plan Drawers At Furniture Show



York Safe & Lock, Canton, Ohio, will exhibit the newest addition to its line of office equipment at the National Office Furniture Association exhibition April 26-29 at the Public Auditorium in Cleveland, Ohio. On display will be York's new Map-and-Plan drawers, a new engineering drawing file designed to meet the need of engineering departments.

The new file can be expanded quickly and easily to any height desired by the addition of standard modular units containing five drawers each. The drawers will handle drawings of the following dimensions: 48 x 36", 36 x 24" or 24 x 18".

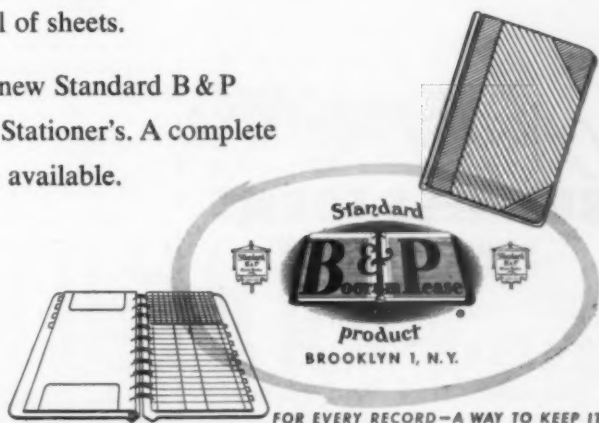
NEW PRONG BINDER



It's a Standard B&P Product

Here's a new, improved Standard Boorum & Pease Prong Binder to speed office work. Low metal side permits flat opening. Special design prevents tipping back, even when all the sheets are on one side. Button on each end opens light but strong positive lock for quick insertion and removal of sheets.

See this economical, new Standard B & P Prong Binder at your Stationer's. A complete line of standard sizes available.



FOR EVERY RECORD—A WAY TO KEEP IT



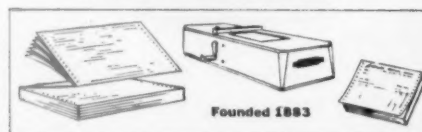
7he time I waste every day! Take these three forms, for instance. Each one has to be typed separately although the information is the same on all three. I saw how the Autographic salesman combined forms just like these for the company downstairs. Cut their typing time in half.

I tried to tell the boss about it three or four times, but he said he's too busy to look into it right now. Gives me a feeling of frustration.

Are you losing time and money like this in your office? Want to find out? Just fill out the coupon below, mentioning the kind of forms you use. We will then select for you, from our Forms Library, samples of combinations of these forms we have made for other concerns. They may suggest a method that will save you real money.

Autographic BUSINESS FORMS

AUTOGRAPHIC REGISTER COMPANY
219 7th Street, Hoboken, New Jersey



AUTOGRAPHIC REGISTER COMPANY 219 7th Street, Hoboken, New Jersey

We would like to receive a folder of sample continuous forms for.....
kind of forms

Forms will be used on.....
type of machine

The nature of our business is.....

NAME.....

POSITION.....

COMPANY.....

STREET.....

CITY.....STATE.....

Waste Paper Costs Industry Millions Annually

(Continued from page 184)

registration cards are no longer filed or posted. In all, a savings of \$25,150 annually is being brought about through reduced man hours of work on files, lower equipment and supply costs and the reclamation of record keeping equipment.

By streamlining necessary paperwork procedure, NRMCM says, it can bring about returns of from five to seven times the initial cost of an installation. In the case of a large department store, NRMCM promised a saving of from \$15,000 to \$20,000 on a project that cost \$3,000. The actual savings reached \$28,000, all of which came from streamlining purchase orders, receiving documents and accounts payable forms.

Often A Source of Revenue

Controlled records keeping systems, designed to determine when to get records out of expensive office files and into low-cost storage centers, have brought about large savings and added sources of revenue to many corporations. Worthington Corporation, for instance, sold 154 tons of wastepaper taken from its files for \$3,400. Pan-American Airways realized a savings of more than \$26,000 a year from wastepaper sales, reduced storage charges and reclamation of office space and equipment.

In setting up controlled records keeping systems NRMCM considers five main factors about each piece of paper. First is value, both operating and historical; second, activity, the actual rate of reference to a filed paper; third, legal requirements for retention; fourth, volume, considering cost versus value, and fifth, experience, the practices of comparable companies.

In some cases, NRMCM controlled record keeping systems have resulted in immediate disposal of 55% to 60% of all records, the transfer of as much as 30% to new-type storage centers, and the retention in office files of as little as 10% of all filed papers.

New-type records storage centers have three very distinct values, whether they are like the Business Archives Center, operated in New York City under the direction of NRMCM, or a center set up by a corporation to store its own records. Recommendations on which type of storage center to use are based on each company's amount of records,

space available and the cost of each type.

The chief benefit of these new-type centers is the reduced cost of storage, compared with the cost of expensive office space. The average cost of storage in the new centers is about 33¢ per 1,000 documents per year. In the case of a leading bank, \$23,000 was saved in the first year of use of a new storage center.

Where it had formerly cost \$48 per year to keep the contents of a four-drawer file in the office, it now costs only \$4 in the new center. Overall, office space was cut 75%, and costs 92%. Office equipment costs were cut 94%. A total of 955 filing cabinets and 686 metal transfer cases were released. Storage capacity was multiplied by four and 7,800 square feet of space was released for other uses.

In working out space-saving systems, NRMCM constantly emphasizes reference ratios—the number of times a filed record is referred to. A good reference ratio is 100:20—that is, for every hundred pieces of paper filed, 20 are referred to. One large industrial organization found that it was filing one piece of paper that was referred to once every 285 years, and still another had papers on file that were referred to once every 576 years.

An Efficient Record Program

Still working on the ratio basis, NRMCM has found that a healthy operation carries about five cubic feet of records per employee, with only two and one-half cubic feet kept in the office. At plant locations the ratio should be about one cubic foot per employee, with only half a cubic foot filed in the office.

Purchasing departments and accounting departments frequently retain as much as 15 or 20 cubic feet of records for every office worker. However, an efficient record program can bring this down to 10:1 or even 7:1, the best that can be hoped for in these departments, because of the exceptionally large amount of paperwork done by them.

In offices it is generally possible to file only one cubic foot of records to one square foot of space, whereas in storage files it is usually possible to store up to two and one-half cubic feet of records to each square foot of space. In new-type records storage centers, the ratio rises to more than five to one.

As a final bonus, new-type storage centers offer an instant reference service on stored records, and

(Please turn to page 196)

Prominent Users of Strathmore Letterhead Papers: No. 104 of a Series

In addition to designing and constructing submarines, General Dynamics produces jet and piston engined airplanes as well as electric motors and generators.



Give your letterhead
dynamic QUALITY!

EB CL EO

"There are many who believe that the laying of the keel of the world's first atomic-propelled vessel, the submarine NAUTILUS, on a shipway of our Electric Boat Division, is the beginning of an historic era of rare significance...inaugurating a new age in the application of atomic power for the service of mankind," says John Jay Hopkins, Chairman and President of the General Dynamics Corporation.

As one of the oldest companies contributing to the defense of the United States, General Dynamics believes it is only sound that it should apply the experiences and knowledge it gains in this production to the improvement and betterment of mankind in a peaceful world.

With its impressive background and its vision, General Dynamics brings to every phase of its operations, a well-founded belief that from the largest to the smallest details, only quality can serve its purposes best. One indication of this belief is its selection of Strathmore Letterhead Papers to carry the messages of its United States divisions.

Dynamic is the word for quality in a letterhead, too. For it can express, by the very feel of the paper and by its appearance, the impression of quality you wish to convey. Let Strathmore say *quality* for your company. Specify it to your supplier when next you order letterheads!

Strathmore Letterhead Papers: Strathmore Parchment, Strathmore Script, Thistlemark Bond, Alexandra Brilliant, Bay Path Bond, Strathmore Writing, Strathmore Bond. Envelopes to match converted by the Old Colony Envelope Company, Westfield, Mass.

STRATHMORE

MAKERS
OF FINE
PAPERS

Strathmore Paper Company, West Springfield, Massachusetts



THIN PAPERS

Reduce

TYPING, MAILING
and FILING COSTS

Use

ESLEECK

THIN PAPERS

Fidelity Onion Skin
Clearcopy Onion Skin
Superior Manifold

Esleeck Manufacturing Co.
Turners Falls, Mass.

(Continued from page 195)

provide tight location control. Due to the storing of records according to reference activity and the training of special file clerks, many organizations have found that they can obtain old record references at a cost of only 22 cents each, a considerable saving over past procedures.

Whereas in the past quality control has been mainly applied to production methods, NRMCM now can apply standard objective quality controls to paperwork and record keeping. This is especially helpful and can result in added savings where companies have a large number of adjustments on invoices, excessive reports of "can't find in files", extra customer complaints or too much paperwork inspection.

Quality control studies follow the flow of paperwork from start to finish, determining where errors are being made and how they are made, and recommends ways of eliminating them. At the same time the study usually results in recommendations of eliminating forms and combining others, as part of the streamlining procedure.

In the way of final proof that a records management installation can be of definite value to purchasing

departments, NRMCM cites the case of a department store that found 70% to 80% of the information on its purchase orders and receiving reports was overlapping. A combined form eliminated 185,000 forms made out in triplicate annually.

The use of microfilm cannot be overlooked by any organization attempting to gain greater control over its records and files. One roll of 16 mm. film, which occupies only 12 cubic inches of space, carries the photographic images of 3,000 letters, or about three-fourths of the contents of a file drawer. This can release a large amount of expensive office space and equipment for other uses and, if handled properly, make filed records more easily accessible.

An example of savings resulting from the use of microfilm is shown in Wayne County, Michigan, which expects to reduce searching time 86% and save about 99 out of every 100 square feet of space used for the storage of records, through its microfilm department. The Board of Auditors intends reallocating the space saved for administrative use.

The historical value of microfilmed records stored in off-premise centers increases every year, and the savings in labor and space continue to build up.



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In Mexico mistakes just GO! The Mexican way is the easiest way, the American way, the world's-best way, the Weldon Roberts way, of correcting handwriting and typewriting mistakes in any language!

Smart users everywhere pick Weldon Roberts Erasers for these biggest advantages: absolute quality, dependability, uniformity — plus biggest selection of exactly-suited sizes, shapes and textures for specific erasing uses.

Refresh your memory NOW on all of the advantages of Weldon Roberts Erasers. ASK your dealer.



399 TRI-PLY—The original, superior, 3-layer eraser for typists. Two outer plies of red pencil-rubber, for smooth, clean erasures on originals and carbon copies, center ply of soft gray ink-eraser for a single letter or a complete line.

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Correct Mistakes in Any Language

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You are missing in every issue of PURCHASING seven services that would cost hundreds of dollars if bought separately—

1. Washington Report for Purchasing Agents
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6. Free catalog service
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Fortune favors the man well-informed in his own profession.

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New York 17, N. Y.

So that I will receive PURCHASING without delay each month, and in order that I may keep and clip it, send it to me personally as noted below—\$4 for one year in U. S., U. S. Possessions and Canada; elsewhere \$10 a year.

Mr.
Title
Company
Address



Treasures ON THE FOAM

MINERAL TREASURES—tiny particles of zinc, lead, copper or molybdenum compounds—collect on the foam of air bubbles stabilized by a frother. This is ore flotation. It permits the separation of one mineral from another, prepares them for refining at the smelter.

To make ore flotation more efficient, mineral mills use a *selective* frother—like methyl isobutyl carbinol. By changing the lifting power of the air bubbles, MIBC permits them to carry the desired mineral particles to the surface where

they can then be skimmed off for the smelter.

Economical, as well as selective, MIBC has in many cases reduced the amount of frother needed by more than 50% and brought higher recovery of a better grade concentrate.

Manufacture of MIBC from petroleum is another example of Shell Chemical's partnership with industry and agriculture. Application of petroleum chemistry to your needs is our constant purpose.

Shell Chemical Corporation

Chemical Partner of Industry and Agriculture

NEW YORK • SAN FRANCISCO



AMONG THE Associations



Outstanding Success Seen For N.A.P.A. Convention In Los Angeles May 24-27

Outstanding success is predicted for the 38th annual international convention of the National Association of Purchasing Agents to be

done to make this visit to sunny California a memorable one in the minds of conventioners. Beginning with special convention trains that



The new Hotel Statler, Los Angeles, Calif., which will be the headquarters of the 38th annual international convention of the National Association of Purchasing Agents, May 24-27.

held May 24-27 at the new Statler Hotel in Los Angeles, Calif. All committees are working steadily on the plans for their parts in the convention program, and report that indications are that this convention will be long remembered by those attending.

In addition to the formal meeting plans, everything possible is being

will follow scenic routes to Los Angeles and following up with suggestions for sightseeing and recreation while in California, nothing is being overlooked to make delegates happy and comfortable on their trips.

The All-Year Club of Southern California reminds association members that May is the ideal month for

a combined business-vacation trip to the area. Average noon temperature for May is 69.3 degrees, with normal rainfall for the entire month measured at only .36 of an inch.

Conventioners will have opportunities to visit a wide variety of popular points in and around Los Angeles, including everything from Beverly Hills, where many movie stars make their homes, to beautiful mountain countryside and California's sunny beaches.

Wardrobe hints to conventioners point out that the rainy season in Southern California is usually ended by February or March, so umbrellas and raincoats will find little use during the convention period. In the Los Angeles area, medium weight casual clothes are in order and formal wear is seldom donned for visits to night spots. If side trips into the mountain areas are planned, it is wise to have a light wrap or topcoat along to keep out the cool air of both days and nights. Unless it is unseasonably hot, May is a bit too early for dips in the Pacific, but all resort areas have swimming pools for the pleasure of visitors.

On trips to the desert spas, everything is keyed to informality. Men will enjoy relaxing in sport shirts and slacks, or shorts, and women will gather quite a tan in sun clothing.

In Northern California, days are more cool, brisk, and apt to be breezy. The style of dress is more formal and perhaps cosmopolitan.

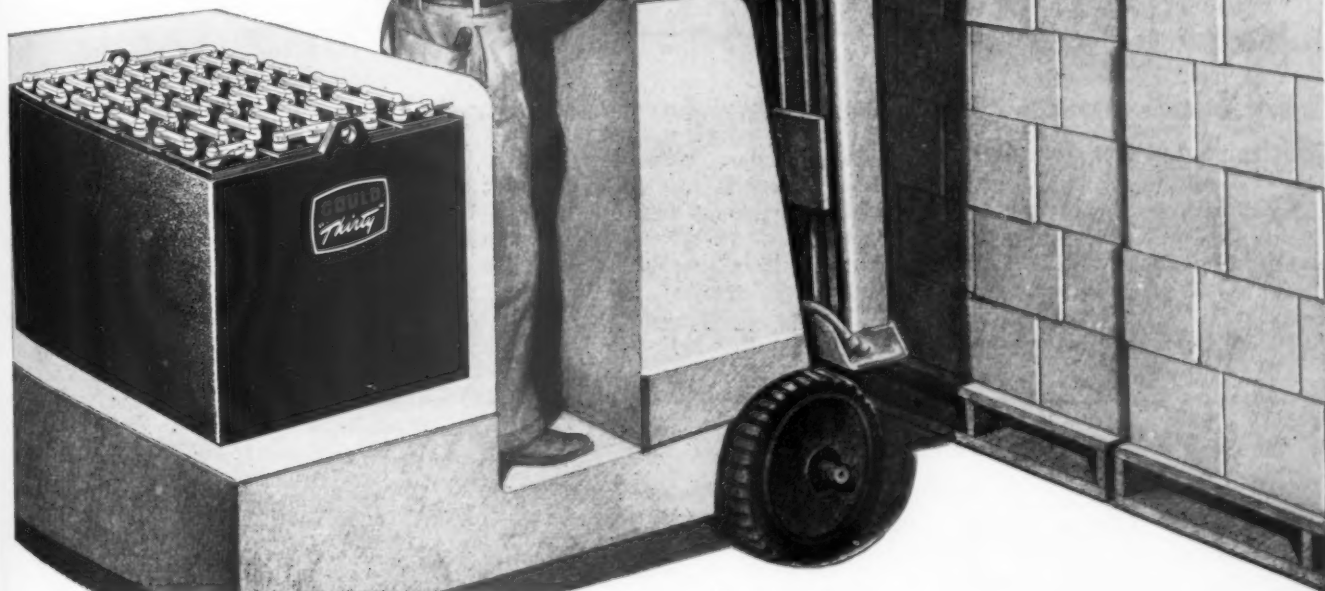
HERE'S HOW TO *BEAT THE* *HIGH COST OF MOVING MATERIALS!*

For maximum materials handling economy, standardize on Gould "Thirty" Batteries for your electric industrial trucks . . . and systemize battery maintenance with the Gould Plus-Performance Plan described at the left. Here's a sure-fire, cost-cutting combination. Write for full information on Gould "Thirty" Batteries and the Gould Plus-Performance Plan.



THE GOULD PLUS-PERFORMANCE PLAN—A library of technical information that tells you how to select, charge, maintain and determine the condition of lead-acid batteries. It's free. Write Gould Battery Information Headquarters.

The Gould "Thirty"—
America's Finest
Industrial Truck Battery



GOULD

Industrial Batteries

GOULD-NATIONAL BATTERIES, INC., TRENTON 7, N. J.

Always Use Gould-National Automobile and Truck Batteries

More Than 600 Attend Alabama's 6th Annual Seller-Buyer Dinner



Principals in the sixth annual Seller-Buyer Dinner sponsored by the Purchasing Agents Association of Alabama were, left to right: Ernest H. Crain, association president; Herman C. Green, District P. A., Republic Steel Corporation; F. D. Haberkorn, sales manager, Caterpillar Tractor Company, and George L. Wilson, general chairman of the meeting.

More than 600 buyers and sellers attended the sixth annual Seller-Buyer Dinner of the Purchasing Agents Association of Alabama held recently in the Thomas Jefferson Hotel, Birmingham.

Featured speakers were F. D. Haberkorn, sales manager, Caterpillar Tractor Company, and Herman C. Green, District Purchasing Agent, Republic Steel Corporation, Birmingham.

Mr. Haberkorn advised the pur-

chasing agents to continue to learn more about the products they buy, their uses and their costs.

"Do these things," he said, "and you—our bosses—will receive our sincere gratitude for playing an ever more important role in helping both of us to reach higher levels of achievement."

Mr. Green expressed appreciation, on behalf of the buyers, to the salesmen for the valuable information and services they constantly provide.

Guests at the speakers' table were introduced by Ernest H. Crain, president of the association.

Following the brief speaking program, a professional floor show of six top acts was presented.



A general view of the speakers' table and a small part of the crowd of 600 attending the sixth annual Seller-Buyer Dinner of the Alabama Association.

New Orleans Members Hear Illustrated Lecture On Diamonds

An illustrated lecture on the diamond was given by Mrs. Gladys Babson Hannaford at the March 3 meeting of the Purchasing Agents Association of New Orleans in the St. Charles Hotel. Mrs. Hannaford

discussed the discovery and mining of diamonds, their cutting, and their use in modern industry. She told how diamonds are classified, and related anecdotes from her experiences as a worker with diamonds among cutters, wholesalers, retailers and miners in South Africa.

The association celebrated "Ladies Night" at the meeting, beginning

with a cocktail party at 6 p.m. and followed by dinner. The reception committee presented each of the ladies attending with a beautiful corsage.

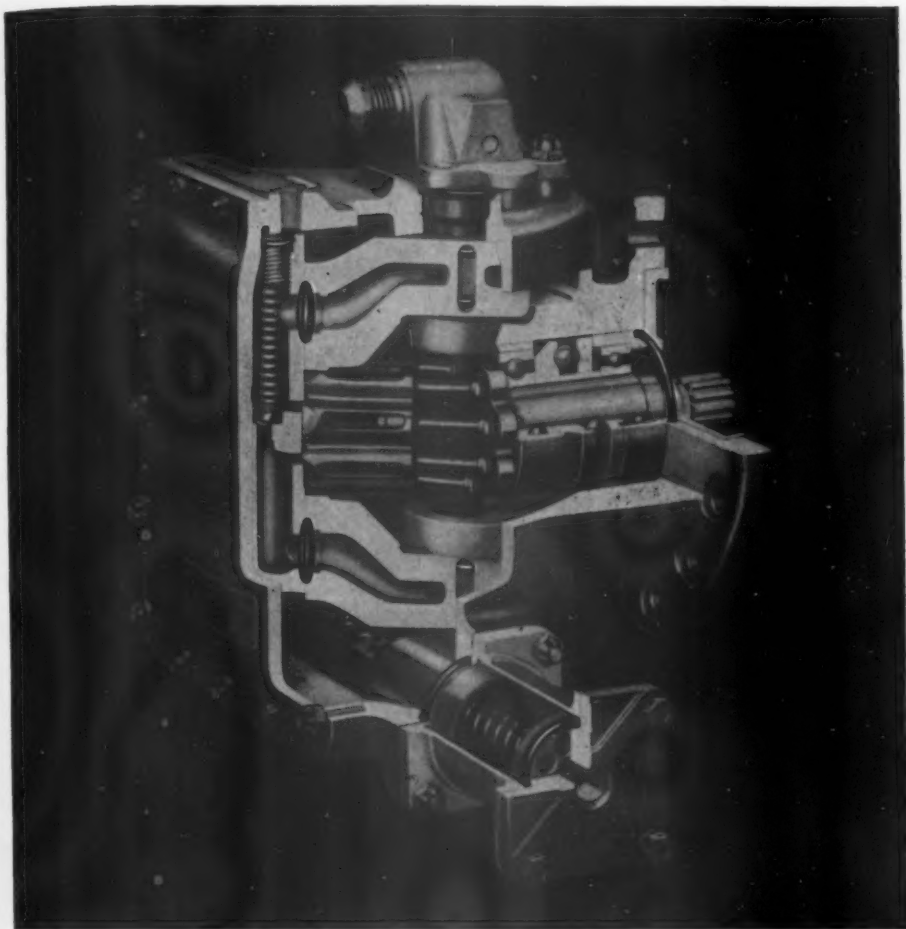
Robert Elsasser, association economist, gave his usual monthly discussion of economic conditions, and maintained that 90-day buying is maximum, short inventories are in order, and added a few buying hints for the ladies.

Mrs. Belle Wolf, millinery buyer and hat designer for Krauss Company, New Orleans department store, gave the ladies some advice on hat styles and illustrated the designing and creation of hats, using Mrs. George Gabler and Fred Lind as live models. Mr. Lind modeled an "Eisenhower" hat.

New members welcomed at the meeting included Douglas S. Meaden, Shell Oil Company; William G. East, Lion Oil Company, and Marion Johnson, Taca Airways Agency, Inc.

Schedule of N.A.P.A. District Council Meetings

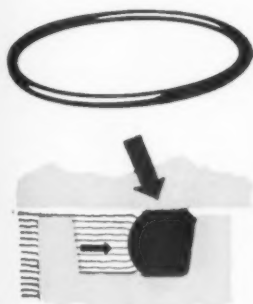
District	Date	Place	District Vice President
No. Two	April 24	Mayo Hotel Tulsa, Okla.	John M. Pierce
No. Three	April 10	Faust Hotel Rockford, Ill.	A. W. Soell
No. Five	May 9	Mount Royal Hotel Montreal, Que.	J. F. Stephenson
No. Nine	April 12	Publick House Sturbridge, Mass.	D. G. Donovan



Cutaway view showing O-rings. Illustration courtesy Vickers, Inc.

PARKER O-RINGS help pumps set endurance record

THIS IS IT



Cross section drawing
of O-ring in groove,
sealing under pressure.

Vickers reversible flow 3,000 PSI hydraulic pumps, equipped with PARKER O-rings, recently operated 304,578 pump hours without malfunction for a 12-month period at one airline.

This noteworthy performance—in all sorts of weather—demonstrates the leakproof, long service qualities of PARKER O-rings . . . precision-molded from superior synthetic rubber compounds. Important, too, they provide simplified as well as efficient sealing. Design involves only a small groove to retain the ring. They are economical to use, easy to replace.

PARKER is the one source for *all* standard O-rings for fuel, hydraulic and engine oil services, and for special service O-rings. Ask your PARKER Distributor for Catalog 5100, or write The PARKER Appliance Company, 17325 Euclid Avenue, Cleveland 12, Ohio.

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Plants in Cleveland • Los Angeles • Eaton, Ohio • Berea, Ky.

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Hercules Gasket & Rubber Co.
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CHICAGO, Ill.
Air Associates, Inc.
5315 W. 63rd St., Chicago 38, Ill.
Shields Rubber Co.
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Neff-Perkins Co.
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Air Associates, Inc.
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Metal Goods Corp.
6211 Cedar Springs Rd., Dallas 9, Tex.

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J. N. Fauver Co.
1534 Keystone Ave., Dayton 10, Ohio

DENVER, Colo.
Metal Goods Corp.
2425 Walnut St., Denver 2, Colo.

DETROIT, Mich.
J. N. Fauver Co.
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Adco Industries
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Fort Worth 7, Tex.

HOUSTON, Tex.
Metal Goods Corp.
711 Milby St., Houston 3, Tex.

INDIANAPOLIS, Ind.
Korhumel Steel & Aluminum Co.
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KANSAS CITY, Mo.
Metal Goods Corp.
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N. Kansas City 16, Mo.

KNOXVILLE, Tenn.
Leinart Engineering Co.
412 E. 5th Ave., Knoxville 5, Tenn.

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Aero Bolt & Screw Co., Inc.
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Inglewood, Calif.
Synthetic Rubber Products Co.
1538 South Eastern Ave.
Los Angeles 22, Calif.

MIAMI, Fla.
Air Associates, Inc.
International Airport, Miami, Fla.

MILWAUKEE, Wis.
Allrubber Products & Supply Co.
612 So. Second St., Milwaukee 4, Wis.

MINNEAPOLIS, Minn.
Van Dusen Aircraft Supplies, Inc.
2004 Lyndale Ave., South,
Minneapolis 5, Minn.

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Durham Aircraft Service, Inc.
56-15 Northern Blvd., Woodside, N. Y.
Nielsen Hydraulic Equipment, Inc.
298 Lafayette St., New York 12, N. Y.

PHILADELPHIA, Pa.
Goodyear Supply Co.
1506 Latimer St., Philadelphia, Pa.

PORTLAND, Ore.
Hydraulic Power Equipment Co.
2316 N. W. Savier St., Portland 10, Ore.

ST. LOUIS, Mo.
Metal Goods Corp.
5239 Brown Ave., St. Louis 15, Mo.

TULSA, Okla.
Metal Goods Corp.
302 North Boston, Tulsa 3, Okla.

WICHITA, Kan.
Standard Products, Inc.
650 E. Gilbert, Wichita 11, Kan.

CANADA
Railway & Power Engineering Corp., Ltd.

Renard Tells Purchasing-Sales Execs Management Is Key To Successful Business

Good management, prepared to meet all competition, is the key to successful business today, George Renard, secretary-treasurer of the National Association of Purchasing Agents, stated at the recent purchasing-sales dinner in the Commodore Hotel, New York City.

Addressing more than 1,000 purchasing and sales executives, Mr. Renard defined well-managed companies as "those that are prepared to meet competition without aid or favors from inflationary conditions."

"Production is catching up with demand," he said, "and shortages are disappearing around the world."

"The future has caught up with us," he declared, "on those billions borrowed on 10-year loans in 1943-1944-1945, and the billions squandered since 1945. We cannot pay off debts with borrowed money and we cannot borrow money unless we can and will pay our debts."

He asserted that the new administration "has the economic cards stacked against it by the New and Fair Deals."

"Our international responsibilities, social security, collective bargaining and high living standards are real advances and new assets," he continued, "but they have also created obligations and responsibilities."

Other speakers at the dinner included Frank W. Lovejoy, Socony Vacuum Oil Company sales executive, and past president of the Sales Executives Club of New York, and Robert A. Whitney, president of the National Sales Executives, Inc. John F. Snedeker, president of the Purchasing Agents Association of New York, presided.

Ed Fielis, New York Association treasurer, and Jep Leonard, secretary, about to be buttonholed by reception committee members Anne Repko, left, and Christine Caprio.



John F. Snedeker, president of the New York Association, Ed Krech of the executive committee, and past president Don Lyons have a bit of refreshment before dinner.



Part of the record crowd at the dinner (above). At right: Robert A. Whitney, president, National Sales Executives; George Renard; and Stanley W. MacKenzie chat during pre-meeting social hour.





Your Lyon Dealer is a 26 LETTER MAN!

from **A**utomotive plants, **B**usiness offices, **C**hurches
and **D**epartment stores to **W**arehouses, **X**-ray manu-
facturers, **Y**acht clubs, and **Z**oos . . .

Lyon Dealers serve them all!

• LYON Steel Equipment Dealers serve every segment of business and industry—from A to Z. This they can do . . . and do well . . . because Lyon provides them with the world's most diversified and complete line of quality steel equipment. A few of the 1500 different standard Lyon products are shown below.

Your nearby Lyon Dealer is a good man to have on your team. He knows how to make steel equipment pay off in saved space, time and money.

FACTORIES IN . . . AURORA, ILL., AND YORK, PA.

LYON METAL PRODUCTS, INCORPORATED

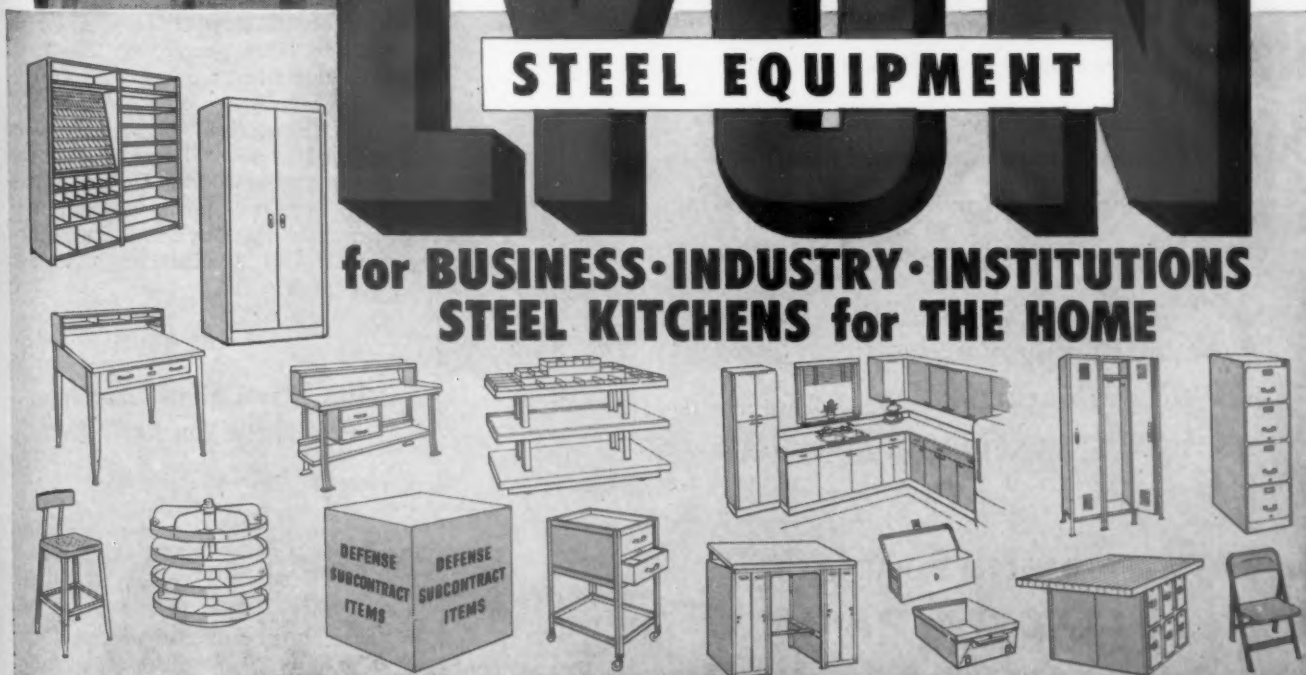
General Offices: 433 Monroe Avenue, Aurora, Illinois

Sold Nationally Through Dealers and Branch Offices

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for **BUSINESS·INDUSTRY·INSTITUTIONS**
STEEL KITCHENS for THE HOME



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- Shelving
- Kitchen Cabinets
- Tool Toters
- Economy Locker Racks
- Display Equipment
- Filing Cabinets
- Service Carts
- Tool Stands
- Lockers
- Cabinet Benches
- Bar Racks
- New Freedom Kitchens
- Flat Drawer Files
- Folding Chairs
- Sorting Files
- Shop Boxes
- Stools
- Storage Cabinets
- Tool Boxes
- Toolroom Equipment
- Revolving Bins
- Work Benches
- Drawer Units
- Tool Trays
- Bin Units
- Drawing Tables
- Parts Cases
- Wood Working Benches
- Hanging Cabinets
- Bench Drawers
- Hopper Bins
- Shop Desks

You can do 95% of all quenching jobs with Sun Quenching Oils

**Sun Quenching Oils offer other
money-saving advantages**

- 1** They decrease maintenance costs by preventing sludge formation and helping remove any deposits that may exist.
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- 3** They assure consistently uniform physical characteristics. Hardnesses obtained are far above the commonly accepted minimum.

For more information about Sun Quenching Oils and how they can help you, call your nearest Sun Office or write SUN OIL COMPANY, Phila. 3, Pa., Dept. PG-4.

**INDUSTRIAL PRODUCTS DEPARTMENT
SUN OIL COMPANY**



PHILADELPHIA 3, PA. ♦ SUN OIL COMPANY LTD., TORONTO & MONTREAL

George Bosworth Elected 7th District Vice President



George Bosworth is congratulated upon his election as vice president of the Seventh District, N.A.P.A., by N. J. Gubler, president of the New Orleans Association, left, and deLesseps S. Morrison, Mayor of New Orleans, right.

George Bosworth was elected vice president for the Seventh District, National Association of Purchasing Agents, at a recent meeting of the Purchasing Agents Association of New Orleans. The Seventh District comprises the Southeastern states of Louisiana, Mississippi, Alabama, Georgia, Tennessee, Florida and Kentucky, which has 10 local associations.

Mr. Bosworth has served as vice president, president and national director of the New Orleans Association, and is at present on the District Activities Committee. He is Purchasing Agent for the City of New Orleans, and previously was employed in several local industrial purchasing positions. He also has served for two terms as national chairman of the Governmental, Educational and Institutional Buyers Group of N.A.P.A.

♦ ♦ ♦

Dallas Association Schedules Golf Party For April 21

The Purchasing Agents Association of Dallas, Texas, has scheduled its annual spring golf stag party for April 21 at the Northwood Country Club. The day's program includes golf all day, with prizes given to winners, buffet dinner and a floor show on the club's outdoor terrace.

Standardization was the topic of a talk given at the March 12 meeting of the association in the Melrose Hotel by Edwin Joyce, assistant director, American Petroleum Institute.

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CLAD METAL

Wonderful for Cooking

- ★ Heats Easily
- ★ Heats Rapidly
- ★ Heats Evenly

★ Ideal
for your
fabrication
methods

Fast, Even Heat Diffusion . . . No Hot Spots!

The word travels fast among consumers: get stainless-clad utensils now for better cooking . . . easy cleaning . . . stay-bright beauty! And the utensil maker says SuVENEER Stainless Clad Metal . . . for fabricating ease . . . for sales! Stainless both sides, mild steel in the center, furnished in coiled strip. Size, temper, finish to your specification. Write.

15%—Type 430
Stainless Steel

70%
Carbon Steel

15%—Type 430
Stainless Steel

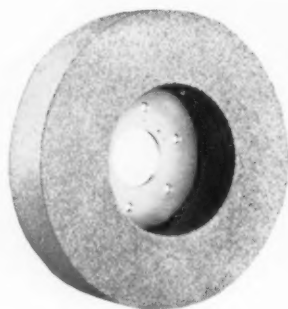
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CARNEGIE, PENNSYLVANIA



but...for carbide
tool grinding
SIMONDS WHEELS
cost much less



Sharpen your carbide tools the economical way. Avoid damaging sensitive edges. Prevent shape distortion. Use Simonds' G Electrodon (silicon carbide) grinding wheel. It's the popular "green" wheel... less expensive than diamond wheels... but a "gem" for safe, cool grinding that prolongs tool usefulness.

Especially efficient for roughing and semi-finishing, these wheels are also frequently used for finishing, too. Made to high standards of accuracy, as are all Simonds Abrasive Company products... including grinding wheels, mounted wheels and points, segments and abrasive grain.

Write for your copy of our bulletin (ESA 181) about G Electrodon wheels, including type PM (plate mounted) and tool and cutter shapes—All available from stock. Your Simonds Abrasive distributor is equipped to serve you locally. We'll gladly send you his name too.

SIMONDS ABRASIVE CO., PHILADELPHIA 37, PA. BRANCH WAREHOUSES: CHICAGO, DETROIT, BOSTON
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Division of Simonds Saw and Steel Co., Fitchburg, Mass. Other Simonds Companies: Simonds Steel Mills, Lockport, N. Y., Simonds Canada Saw Co., Ltd., Montreal, Que. and Simonds Canada Abrasive Co., Ltd., Arvida, Que.

Elmer A. Stevens of Goodrich Addresses Akron Association



Fafian Backrach

Elmer A. Stevens

Elmer A. Stevens, treasurer of the B. F. Goodrich Tire and Rubber Company, was the featured speaker at the Executive Night meeting of the Akron Purchasing Agents Association March 17 at the Akron Woman's City Club.

Mr. Stevens, who is a former member of the Akron Association, joined Goodrich in 1928, following graduation from Yale University Sheffield Scientific School. He served in the company's rubber processing division, general chemical laboratories, raw materials department, and Far East staff before being named Director of Purchases in 1947. He became treasurer September 1, 1952.

The dinner meeting got underway at 6 p.m., with Don Alexander, association president, presiding.

1 1 1

Texas Panhandle Association Elects Weldon Jolly President

Weldon Jolly has been elected president of the Texas Panhandle Purchasing Agents Association for 1953. Other officers are E. A. Cravens, first vice president; T. R. Cross, second vice president; Kenneth Reeves, secretary, and Norman Prickett, treasurer.

Gurney Dodd, retiring president, becomes national director, and Barron Chapman is alternate national director.

Local directors are M. Q. Wilson, G. F. Branson, B. W. Smith and G. W. Hollifield.

New members of the Association include T. R. Ratcliff, G. W. Stephens, R. B. Hughes, Louis Seewald and W. F. Perkins.



—E. J. (Eph) Davis, Manager of Traffic and Order Dept., with new Caterpillar DW20 Tractor

"This Cat will never be an orphan!"

"Construction men work against deadlines. If machinery can't be serviced—regardless of age—with genuine manufacturer's parts, they don't want it. It's an 'orphan'!

"This can't happen when it's Caterpillar-built.

"If the Caterpillar dealer is temporarily out of stock, he can get any part practically overnight—by Air Express! Air Express speed, closely coordinated with our Special Order department, gives all domestic Caterpillar dealers—over 375 stores—com-

plete parts service for every model ever built. It gives them an 'inventory' of some 80,000 different parts!

"'Down time' is cut to the minimum . . . machine life extended to the maximum . . . with the help of Air Express speed and dependability.

"That's why Caterpillar dealers frequently tell us 'Ship it Air Express'—averaging more than 18 times a day!"

Air Express gets there first—and often *saves money*, too! In many weights and distances, rates are *lowest* of all commercial air carriers!

It pays to express yourself clearly. Say Air Express! Division of Railway Express Agency.



AIR EXPRESS
GETS THERE FIRST
via U. S. Scheduled Airlines

with **KEX** wiping towels...

**I BUY WIPES—
NOT WEIGHT**



"I decided long ago to stop buying scrap rags and waste by the pound and switch to Kex wiping towels because a lot of the stuff we were getting wasn't usable. It had no uniformity and the men had to pick and choose the right piece for every job. That isn't true with Kex—every square inch is usable.

"After the first few months of using Kex Service my month-end cost for wipers was down substantially! The men have a uniformly-sized, absorbent towel for every job. And we don't run the risk of scratching or damaging delicate precision machinery."



YOU DON'T BUY A THING—just pay a low monthly rental. Kex towels are distributed nationally—for complete information, see your Classified Telephone Directory for nearest Kex distributor, or write Kex National Service, 295 Fifth Avenue, New York 16, N. Y.

**"KEX" NATIONAL
SERVICE**

REG. U.S. PAT. OFF.



It isn't Kex unless it's imprinted with the Kex name

N.A.P.A. Membership Voted To Little Rock Association

The Little Rock Purchasing Agents Association has been voted into membership in the National Association of Purchasing Agents. Little Rock membership now totals 49 active and six associate members. President Kyle Cook, Jr., expects the group to reach 75 shortly.

Other officers include L. C. Highfill, first vice president; High McMillian, second vice president; John Bigbee, secretary, and Marion Deason, treasurer.

J. K. Chambers is national director. Local directors include F. C. Storm and Ray Parker.

1 1 1

Dayton Association Honors Harrie D. Hussey On Retirement



Harrie D. Hussey

Harrie D. Hussey, charter member and past president of the Purchasing Agents Association of Dayton, Ohio, received an honorary membership from his co-members recently upon his retirement as Purchasing Agent of the National Cash Register Company. Edward G. Sander, local director, presented the honorary membership and testimonial of appreciation to Mr. Hussey.

Mr. Hussey joined NCR as a typist in the sales division in 1905. In 1907 he became secretary to the purchasing agent, later a buyer, and in 1917 was named Purchasing Agent.

In 1915, after returning from the national convention in Pittsburgh, Pa., Mr. Hussey, Fowler S. Smith and Robert C. Anderson formulated plans for starting a purchasing agents association in Dayton. It was organized November 1, 1917, with 32 charter members.

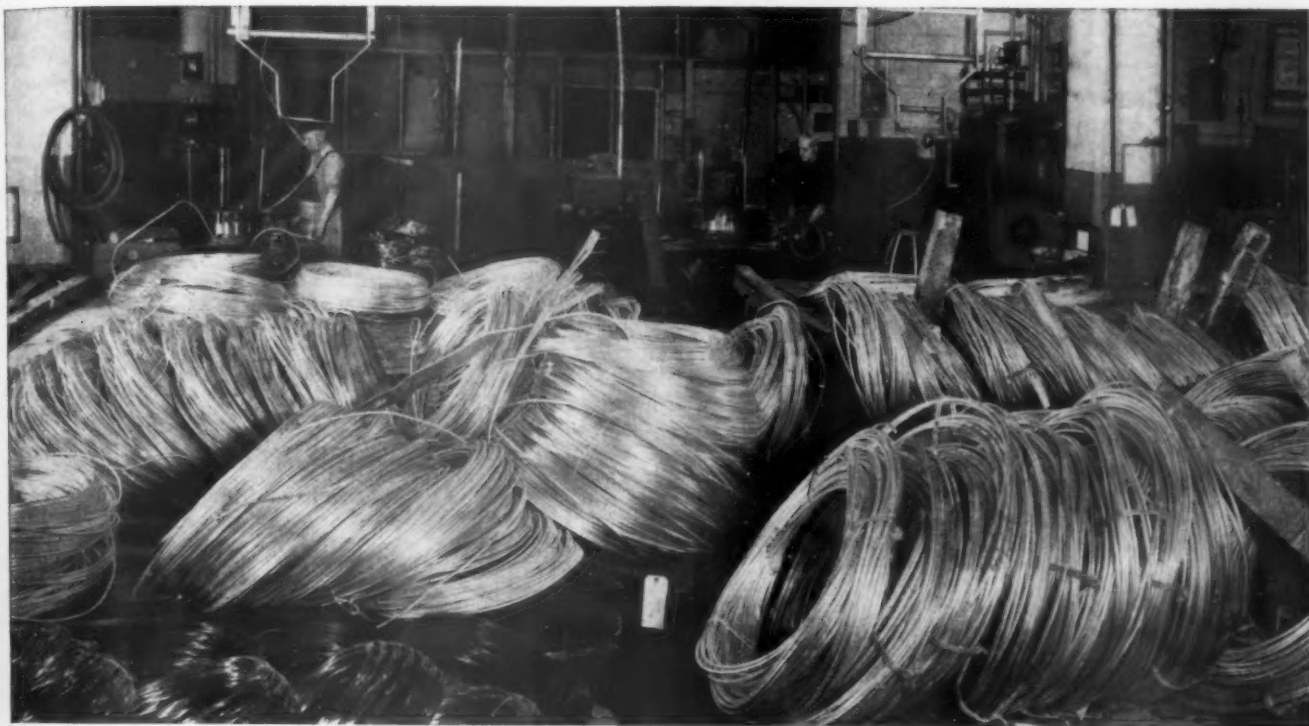
(Please turn to page 212)

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Need Wire with Higher "I.Q."?

Is your copper-base alloy wire giving the higher "I. Q." (Inner Quality) you need for . . .

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Bridgeport's brass and silicon bronze wire have the higher "I.Q." which is necessary for making difficult cold headed and roll threaded parts. They are made under strict laboratory control to meet your requirements and specifications *exactly*.

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Write for Bridgeport's "Technical Handbook" for additional information on wire alloys for cold working and help on your metal requirements.

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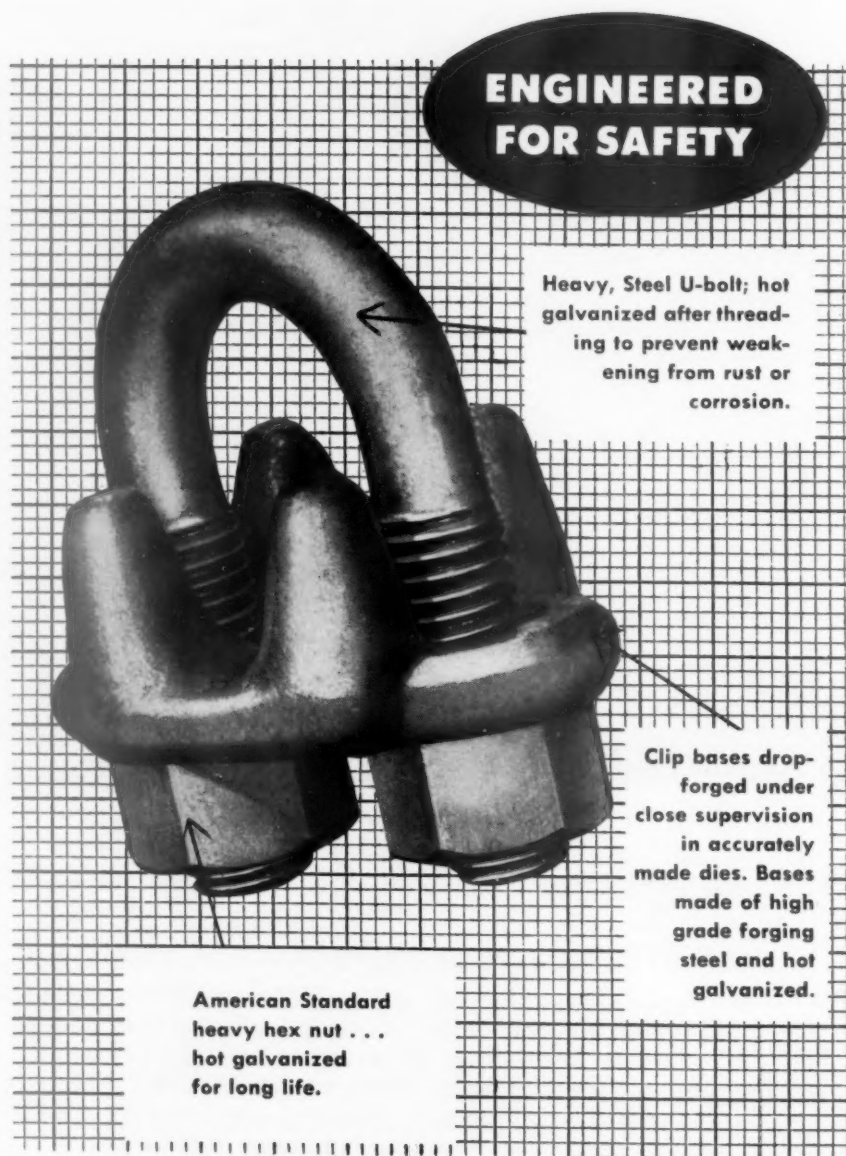
BRIDGEPORT BRASS COMPANY



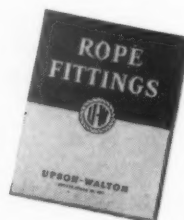
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New York • Chicago • Pittsburgh

YOU CAN DEPEND ON UPSON-WALTON'S LONG EXPERIENCE—ESTABLISHED 1871

(Continued from page 210)

The Dayton Association was host for the annual joint meeting with the Production Control Managers Association held March 12. Willson H. Hunter of the National Advisory Committee for Aeronautics, was the principal speaker. He discussed "Supersonic Flight," using model airplanes to illustrate his talk.

At the February meeting, Dayton members were the guests of Loren Askins, Purchasing Agent and Superintendent of the Gebhart Folding Box Company, at dinner and during a tour of the Gebhart plant. M. F. Neff, vice president of Gebhart, addressed the group. Also, the film "The Magic Box," presented by the Folding Paper Box Association of America, was shown.

1 1 1

50 Brave Near-Blizzard To Attend Denver Ass'n Meeting

Nearly 50 members and guests of the Purchasing Agents Association of Denver, Colo., turned out in near-blizzard weather to attend the February meeting at the Brown Palace Hotel.

Farrington R. Carpenter, a member of the Colorado Legislature, spoke on "Purchasing in the Rural Field." He is also a former Director of Revenue for the state. Mr. Carpenter's theme was developed under three headings: Increase in pervasive competition; increase in the effectiveness of management, including purchasing, and progress due to science and technology.

The association has postponed a plant visit to the Tivoli Brewery originally scheduled for February 25 until after Easter. A possible plant visit to the Cobusco shell plant may be made in April or May.

Three new members were introduced at the meeting. They were A. H. Brenker of the Parker Company; Oliver K. Deaton, Metal Goods, Inc., and A. M. Chase of Gates Rubber Company.

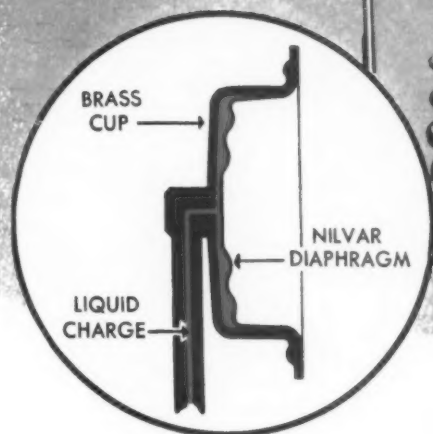
After the meeting Tom Fitzgerald gave some recent information, as a part of the Educational Forum, on "What Lies Ahead for American Business."

1 1 1

Mississippi Ass'n Elects

New officers of the Mississippi Purchasing Agents Association include R. E. McGrath, president; W. E. Nance, vice president; R. E. Saye, secretary, and W. E. Johnson, treasurer.

**NILVAR
HERE**



**HIGH
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PENN Type 75 Gas oven
control (sectioned)

Nilvar^{*} Alloy Makes New PENN Gas Oven Controls Self Compensating

By providing a self-compensating flexible diaphragm assembly for its liquid expansion controls, PENN Controls, Inc. compensates for ambient heat and eliminates control time-lag. Result: controls accurately maintain the temperature dialed.

The PENN Self-compensated Diaphragm assembly utilizes a brass retaining cup and a flexible Nilvar diaphragm to form a hollow chamber. This connects to the temperature bulb through a capillary tube, the entire unit being filled with a liquid charge.

Because brass expands much more than Nilvar, ambient heat *simultaneously* increases the volume of the chamber, when it increases the volume of the liq-

uid charge. This self compensation reduces the effect of ambient heat on the diaphragm to zero and permits the diaphragm to respond *only* to bulb temperatures.

PENN specifies Nilvar for this application because it has a very low temperature coefficient of expansion—as low as .000001/C°—lowest of any alloy, and comparable to that of quartz. And its consistent uniformity helps maintain the high accuracy which PENN production standards require.

The remarkable dimensional stability of Nilvar may answer your engineering problems too. Why not talk it over with us. We'll be glad to make recommendations geared to your specific needs.

*T. M. Reg. U. S. Pat. Off.



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B BETTER
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Michigan Electric Resistance WELDED STEEL TUBING

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1/8" to 4" O. D. 9 to 22 gauge

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1/2" to 2" 20 gauge, 1" to 2 3/4",
14, 16, 18 gauge

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has uniform strength, weight, ductility, I. D. and O. D., wall thickness, machinability, and weldability. It can be flanged, expanded, tapered, swaged, beaded, upset, flattened, forged, spun closed, fluted, and rolled. Available in a wide range of sizes, shapes and wall thicknesses, prefabricated by Michigan or formed and machined in your own plant.

Plus Fabricating of our own tubing Michigan is interested **ONLY IN THE FABRICATION OF** Stainless steel, copper, brass and aluminum tubing.

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Vacuum Cleaner Handle

An excellent example of how the use of welded steel tubing simplifies assembly of parts, cuts down costs, is the cleaner handle made by Michigan for manufacturers of vacuum cleaners.

The handle is shipped by Michigan ready for chrome finishing and assembly to the vacuum cleaner. Stampings for the cord holders are welded to the tubing, an elongated hole punched for the interior wire cord and tumbler switch. The surface finish of the cold rolled steel tubing, as processed by Michigan, is suitable for polishing and chrome plating.

No matter what you manufacture, Michigan engineers will be pleased to consult with you concerning an application of welded steel tubing to improve your product and lower production costs.



Consult us for engineering and technical help in the selection of tubing best suited to your needs.

Pittsburgh Association Members Visit Blaw-Knox Co. Plant



Plant Visit by some 80 members of the Purchasing Agents Association of Pittsburgh included lunch in the cafeteria of the Blaw-Knox Equipment division of Blaw-Knox Company. Following lunch the purchasing agents were taken on a tour of the plant by J. E. McWilliams, Director of Purchases, Blaw-Knox Company, and H. Russell Loxterman, assistant sales manager, Blaw-Knox Equipment division.

More than 80 members of the Purchasing Agents Association of Pittsburgh took part in a visit to the plant of the Blaw-Knox Equipment division of Blaw-Knox Company on the afternoon of the regular February meeting in the William Penn Hotel.

Following the plant visit the meeting got underway at 6:30 p.m. with a discussion on packaging by Lee R. Forker, chairman of the N.A.P.A. Container Committee. A film entitled "Basic Packaging," prepared by the N.A.P.A. Committee on Education, was shown.

Lancaster Purchasing-Sales Execs Hear Advertising Man

Arno H. Johnson, vice president of the J. Walter Thompson Advertising Agency, was the featured speaker at the joint meeting of the Purchasing Agents' Club of the Manufacturers' Association and the Sales Executive Club, March 18 in the Hotel Brunswick, Lancaster, Pa. Mr. Johnson received the first American Marketing Association "Annual Award For Leadership In Marketing," in 1945.

Montreal Association Holds Annual Ladies' Night Party

The annual Ladies' Night celebration of the Purchasing Agents Association of Montreal was held February 20 in the Sheraton Mount Royal Hotel. The evening's program included dinner, dancing and entertainment.

RESISTANCE WELDED STEEL TUBING
Michigan STEEL TUBE PRODUCTS CO.
THE OLDEST NAME IN ELECTRIC

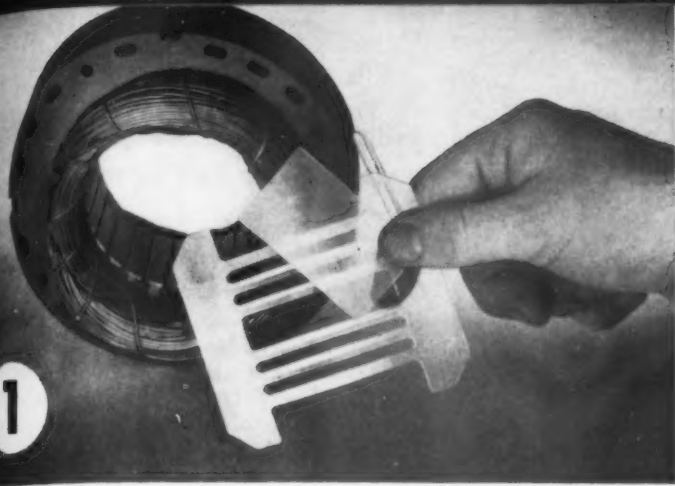
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PURCHASING



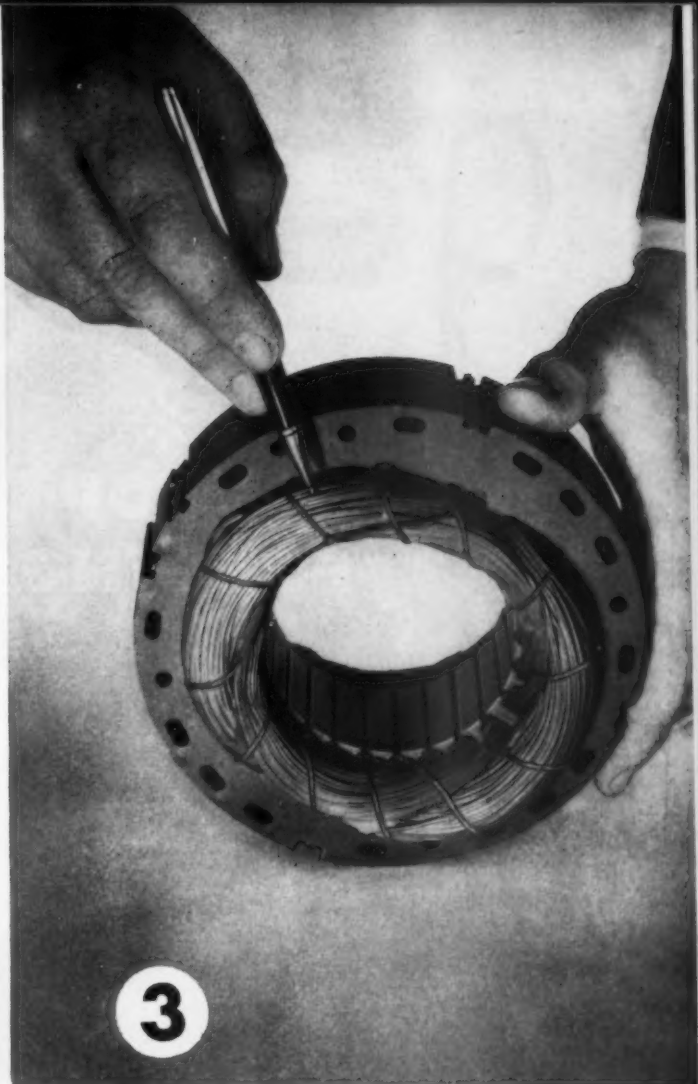
1

MYLAR POLYESTER FILM** with extremely high dielectric strength now used for the first time in all slot, phase, and wedge insulation.



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MAIDLESS NEOPRENE LEADS of clear and permanent color retain high insulation strength and flexibility under severe operating conditions.



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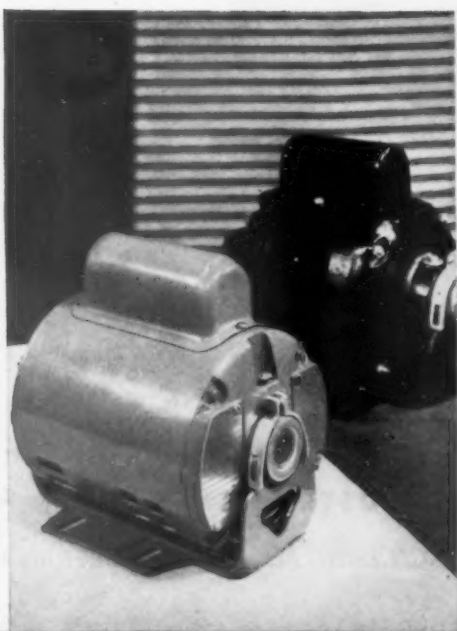
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lengthens fhp motor life!

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It's wise to specify Ritco Bright Finish Drop Forgings when accurate parts of topmost strength are required. These forgings are produced to your blueprint in steel or non-ferrous metals, in weights from ¼ lb. to 15 lbs. They're smooth and flash-free, require a minimum of machining before assembly into your product.

Come to RITCO for drop forgings, special fasteners, and finished bolts with regular or heavy heads. We also offer complete facilities for finishing — machining and grinding. Estimates gladly submitted. Rhode Island Tool Company, 148 West River Street, Providence 1, Rhode Island.

EXCLUSIVE NEW ENGLAND
REPRESENTATIVES FOR
CLEVELAND CAP SCREWS

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★ SERVING AMERICAN INDUSTRY SINCE 1834 ★

British Columbia, Washington Associations Hear Renard

George A. Renard, secretary-treasurer of the National Association of Purchasing Agents, was the guest of honor at the March 2 meeting of the Purchasing Agents Association of British Columbia in the Hotel Vancouver. This was the association's first Executive Night, and was attended by members and top officials of their companies.

Two films, "Canadian Trade Fair, 1952," and "25 Under Par," the film of the Canadian Open Golf Tournament, were shown at the February meeting of the association.

On his first trip through the Northwest in several years, Mr. Renard also addressed the March 6 meeting of the Purchasing Agents Association of Washington in the Olympic Hotel, Seattle. A large turnout of members and their guests enjoyed Mr. Renard's speech, which was followed by an entertainment program.

Members of the Washington Association visited the Langendorf Bakery in Seattle, February 26. Luncheon was served at noon, followed by a visit through the plant.

Purchasing agents and their ladies from throughout Western Washington attended the association's annual mid-winter party February 21 at the Rainier Club, Seattle. C. W. Reynolds was chairman of the entertainment committee, assisted by Fred W. Barnum, Charles A. Beffa, Jr., C. H. Begley, Harry W. Boyd, Henry W. Hoyt, Fred H. Luthile, Paul E. Mason, John E. Ross, Henry G. Russell, Harold L. Wanser, Donald B. Law, George L. Neil, Robert J. Sheehan and J. H. Yunker.

1 1 1

12 New Members Elected By Philadelphia Association

The Purchasing Agents' Association of Philadelphia recently elected 12 new members.

They are: John R. Cannon, Beneficial Saving Fund Society; Melvin H. Grovatt, Suckle Electronics Company; James D. Hull, Philadelphia Quartz Company; William M. Imbrie, Lehigh Coal & Navigation Company; John H. Kern, Horace T. Potts Company; Thomas A. Mawhinney, and John P. Meyer, Philadelphia Quartz Company; William F. Morrison, Sunrock Refrigeration Company; A. C. Slickers, Walker Brothers; H. Jamison Swarts, University of Pennsylvania; George S. Weber, E. W. Twitchell, Inc., and Donald H. Wiese, Walker Brothers.



SYNTHANE—out of sight, but in the picture

Whenever you turn on television you are using a little-seen, but essential, material called Synthane.

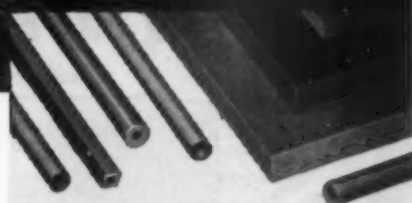
Synthane is a laminated plastic of multiple virtues, which recommend it for many jobs in television.

Synthane is an excellent insulator, laminable with metal, hence, a good base for space-reducing "printed" circuits. Synthane is notable for low power factor, low moisture absorption, and ease of fabrication, three properties desirable for radio and television insulation. Synthane

plays a supporting part in many behind-the-screen and behind-the-camera applications.

Synthane is also light in weight, strong, vibration absorbing, chemically resistant, high in dielectric strength, dimensionally stable, heat resistant to about 300°F.

There may be a place for Synthane in your product. To find out more about the possibilities of Synthane for your purpose, write for the complete Synthane Catalog. Synthane Corporation, 9 River Road, Oaks, Pennsylvania.



Synthane laminated plastics are produced under heat and pressure from laminations of resin-impregnated materials such as paper, fabric, glass cloth, asbestos, etc. Synthane plastics are available in sheets, rods, tubes, and fabricated or molded parts. Each of the many Synthane grades has a combination of useful properties.

Synthane in Television...



A—Television camera parts

B—Television receiver printed circuits—metal foil on Synthane sheets


C—Channel selector switch insulation

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LAMINATED PLASTICS

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SILICON • SOLDERS
TUNGSTEN • TYPE METALS
WHITE CASTING METALS
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ALL METALS • ALL ALLOYS • ALL FORMS

C. S. Stackpole Addresses Syracuse, Central N.Y. Ass'n

Chester S. Stackpole, vice president of the Eureka Williams Company, Bloomington, Ill., was the guest speaker at the February 25 meeting of the Purchasing Agents Association of Syracuse and Central New York. The meeting was held in the Onondage Hotel. Mr. Stackpole discussed the sales manager's view of the purchasing agent.

Mr. Stackpole formerly was sales manager of the Walworth Company, Boston, Mass., and for seven years was associated with Stone & Webster, management engineers, in charge of their public utilities management branch. He also was merchandising manager of the Consolidated Gas, Electric and Power Company, Baltimore, Md.

1 1 1

Youngstown Association Hears Talk By Charles E. Reno

Members of the Youngstown District Purchasing Agents Association heard Charles E. Reno speak on "The High Cost of Economic Ignorance" at the February 24 meeting in the Youngstown Club. The meeting got underway at 6:30 p.m. following a forum discussion.

1 1 1

Traffic Discussion Held At Central Michigan Meeting

"Self-Improvement in Traffic Matters," was the subject of a discussion led by Frank Waters, Traffic Manager, State of Michigan, preceding the February meeting of the Central Michigan Purchasing Agents Association at Kellogg Center, Michigan State College, East Lansing.

Later, a joint meeting was held with 65 business administration students of Michigan State College. The sound color film "Industrial Purchasing," sponsored by PURCHASING magazine, was shown.

1 1 1

W. Van Murchie Addresses Toledo's February Meeting

"It's All In The Point of View" was the title of a talk given by W. Van Murchie at the February meeting of the Toledo Purchasing Agents Association at the Toledo Yacht Club. Mr. Van Murchie is a humorist, philosopher and businessman.



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More Power
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a Bigger, Better WISCONSIN

HEAVY-DUTY *Air-Cooled*

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**The NEW Model
VG4D** 25 to 36
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Complete Power Unit
with Clutch Reduction.

Another engineering achievement . . . the NEW Model VG4D V-type 4-cylinder Wisconsin Heavy-Duty Air-Cooled Engine, increasing the power range to 36 hp. — a power gain of more than 16% over the VP4D, former top engine in the line.

The NEW Model VG4D is an exceptionally smooth-running, even-firing engine. Its light weight and compactness in design simplify the problem of engine installation on modern equipment where weight and space limitations are important factors.

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The Model VG4D engine is definitely Tops in Performance, delivering a maximum of power per pound of engine weight, at minimum operating and maintenance costs.

We invite your request for complete detailed specifications.



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RESEARCH—An outstanding creation, Central (Patented) Stamped Wing Nuts answer the demand for a sturdy, low cost thumb nut. Available in steel or brass they provide easy adjustments and improve the serviceability and appearance of your product.



KNOW-HOW—Central's special skill in the manufacture of wing nuts is not limited to the stamped wing type with its many variations. Central also produces solid, sturdy, pressed wing nuts in four standard blank patterns, brass or steel, with all standard threads.



QUALITY—Central's research and know-how coupled with high precision, high speed equipment, insures unsurpassed quality in standard or special wing nuts that spin-on and grip securely. We invite you—take advantage of Central's ability to produce for you...fast!

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If you are looking for a superior bar stock, Shenango tubular and solid stock is for you! Shenango Meehanite Metal bars have exceptionally fine grain, higher tensile strength, finer, more uniform graphite dispersion. So naturally you can count on superior wear-life, and less chance of breakage or distortion in service.

Learn more about the money-saving qualities that make Shenango solid and tubular bar stock a pre-

ferred material for bearings, bushings, pump parts, liners, sleeves, gears, dies, gauges, and many other common and special parts. Send for the new Shenango Bar Stock Bulletin No. 152, containing additional information and a list of standard, conveniently stocked sizes.

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Fort Worth Ass'n Sees Films

Fred E. Merkle of the Bell Aircraft Corporation showed two films at the February meeting of the Purchasing Agents Association of Fort Worth in the Worth Hotel. Mr. Merkle is a member of the association. The films were entitled "Utility Unlimited" and "Mercy Has Rotary Wings."

1 1 1

Cleveland Association Hears Educator-Newspaperman

The Purchasing Agents Association of Cleveland deviated from its usual program pattern for the February meeting by having as the featured speaker, Raymond Beals, lecturer, educator and newspaper columnist. The meeting was held in the Hotel Allerton.

The February forum meeting discussed "Problems of Small Purchasing Departments." Panel members included Charles E. Lynch, Jr., Manufacturers Gasket Company; Arthur H. Reik, Lewis Welding & Engineering Corporation, and Frank C. Yehl, S. K. Wellman Company.

1 1 1

7th District Directors Guests At Alabama Association Dinner

National directors of the Seventh District associations were guests of honor at a dinner meeting of the Purchasing Agents Association of Alabama, March 13 in the Thomas Jefferson Hotel, Birmingham.

W. S. Flinn, vice president, Seventh District, N.A.P.A., was the principal speaker at the meeting.

At a meeting March 26, Lewis D. Fykse, vice president in charge of engineering, Standard Tool Company, Cleveland, Ohio, spoke on "The History and Application of Cutting Tools."

1 1 1

Talk, Film On Copper Featured At Rochester Ass'n Meeting

The Purchasing Agents Association of Rochester, N. Y., heard Paul B. Andrews, merchandise sales manager of Revere Copper and Brass Company, speak on "Copper—Past, Present and Future," at the February 25 meeting in the Rochester Club. A movie entitled "Copper and Its Alloys" was shown.

Mr. Andrews and Chuck Villnow took part in a pre-meeting forum, in which Ken Proud was moderator.

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...increase output*

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Westinghouse AB-I Circuit Breakers reduce down time after a circuit fault . . . because they can be "Reset" in seconds after the fault is cleared. As a result, you save time and labor; production keeps rolling.

In vivid contrast, other types of circuit protective devices require element replacements. This takes valuable time for which you pay.

Unnecessary service interruptions are out, too, with AB-I Breakers. Inverse time-delay trip mechanism carries harmless, peak overloads without interrupting the circuit. Yet, on shorts or dangerous overloads all poles open instantly. Tamper-proof calibration stays exact.

Self-indicating AB-I Breaker handle mechanism shows breaker setting without opening cover. Handle mechanism meshes with breaker handle regardless of breaker setting, prevents damage if cover is slammed shut. Handle may be padlocked to prevent tampering, but on a fault, breaker is trip-free. It cannot be held or locked "On".

For facts, call your Westinghouse Representative or write for B-5456, Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania.

J-30091



"Of course, circuit breakers save money"



YOU CAN BE SURE...IF IT'S
Westinghouse

AB-I Circuit Breakers
THE COMPLETE LINE



Water-
and Dust-Tight

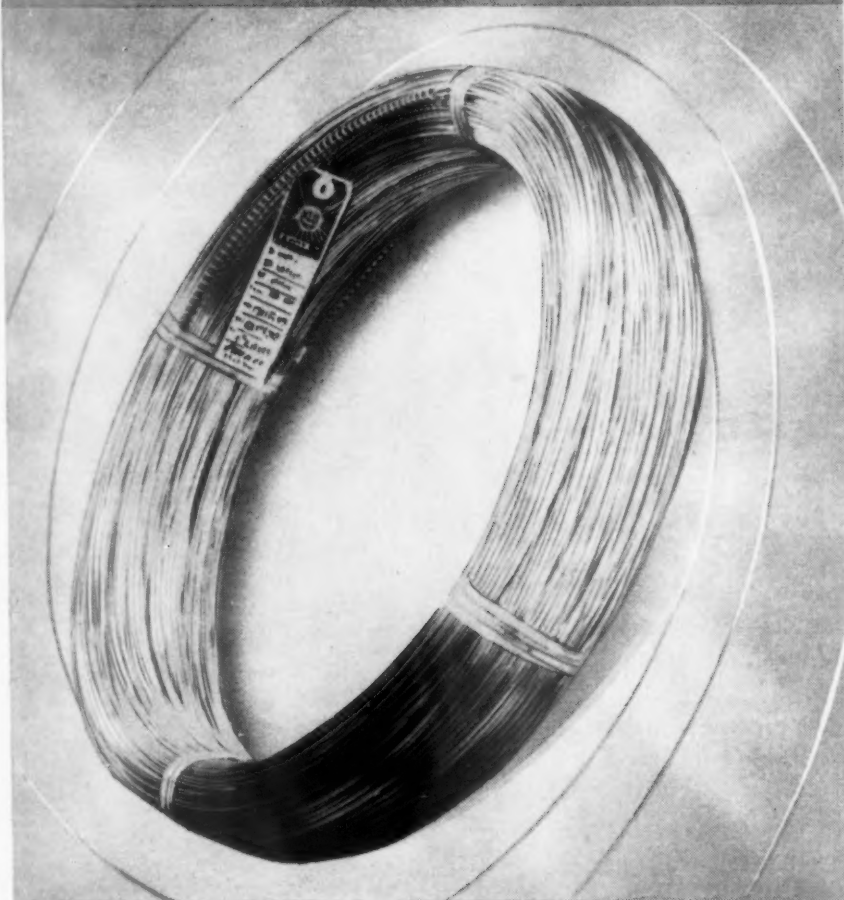


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Oil-Immersed—
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*People want and expect more things
than ever before in history—and by
special delivery, too.*

And that, to a considerable extent, is true of the wire business. The day when any wire would do has long since passed—and that is one of the reasons why JOHNSON MUSIC WIRE is made in more than 200 sizes, all the way from 8.3 feet to over seven miles to the pound. And every order is routed for the fastest possible special delivery.

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WORCESTER 1, MASS.

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Christensen, Soell Address Chicago Association Meeting

H. W. Christensen, president and A. W. Soell, vice president, of the National Association of Purchasing Agents, were the featured speakers at the March 12 meeting of the Purchasing Agents Association of Chicago, held in the Hotel Sherman. Members of the Chicago Association's Women's Division and their assistants were invited to the meeting.

A record crowd of more than 26,000 attended the 19th Products Show sponsored by the Chicago Association in the Hotel Sherman, February 17-19. A total of 188 were opened to those attending the show. Judge H. C. Kessinger was the principal speaker at the closing night banquet.

1 1 1

Interesting Discussions Set For Educational Buyers Meeting May 6-8

The annual convention of the National Association of Educational Buyers at the Edgewater Beach Hotel, Chicago, Ill., May 6, 7 and 8, will feature discussions on insurance coverage, salvage savings and factors influencing construction costs.

The convention will get underway the evening of May 5 with a preview of manufacturers' and suppliers' exhibits, and the annual business officers' conference is scheduled for 9:30 a.m. May 6.

Other panel sessions will include discussions by educational and business leaders of many subjects of interest to educational buyers. These subjects will include the Washington outlook, textile buying, paper and printing and balancing of the food budget.

The three-day meeting will end with the president's inaugural banquet the evening of May 8.

1 1 1

Chester Stackpole Addresses Syracuse-Central New York Ass'n

Chester Stackpole, vice president, Eureka Williams Corporation, Bloomington, Ill., was the principal speaker at the February meeting of the Purchasing Agents' Association of Syracuse and Central New York, in the Onondaga Hotel, Syracuse. Mr. Stackpole spoke on "The Purchasing Agent As The Salesman Sees Him."

10 U. S. Royal adhesives cover 90% of all industrial uses!



Free booklet tells how to pick the right adhesives

This booklet makes you a specialist in adhesives. It gives you the facts a specialist needs to know about each adhesive in the U. S. Royal "10-90" series. It shows you how to select the adhesive whose characteristics best suit your requirements, according to base, thinner, viscosity, weight, bonding range and general use. And remember that the U. S. Royal line takes care of 90% of normal adhe-

sive requirements. For unusual cases, "U.S." offers a complete line of "specials"—designed for particular bonding problems. Write today to address below for your copy of the U. S. Royal Adhesive Booklet.

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Threaded Specialties to Class 3 Fit



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Two items have become widely used because of their lower cost, more accurate fit and greater-than-needed strength. Pawtucket's eye bolts and tee-head bolts are made by an exclusive process that guarantees all these advantages.

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THE PLACE TO SOLVE YOUR BOLT PROBLEMS

T.M. REG.

Los Angeles Association Accepts 11 New Members

New members approved by the board of the Purchasing Agents' Association of Los Angeles include: Arthur D. Schlauder, Las Vegas Machine & Eng. Works, Inc.; Carl H. McBain, Erb & Gray; Edmond P. Collins, Calbest Engineering & Electronics Company; Quentin L. Kenney, Drake Steel Supply Company; William W. Holcombe, Richmond Paper Company; Robert J. Margolis, Califone Corporation; Ellsworth S. Fortman, St. Vincent's Hospital, Los Angeles; Jay G. Holman, Pacific Finance Corporation; Allen Kent, Marshall Tool & Supply Corporation; Norman L. Stevenson, Technical Development Corporation; Alfred J. Reh, KTTV, Inc.

1 1 1

Buffalo Association Hears Union Carbide & Carbon Exec

C. W. Goodman, Assistant Director of Purchases, Union Carbide and Carbon Corporation, discussed "Commodity Prices—Supply—After Decontrol?" at the March 11 meeting of the Purchasing Agents Association of Buffalo, N. Y., in the Hotel Sheraton.

"The Story of Packaging," a color sound film, was shown through the courtesy of the Continental Can Company.

The purchasing agents' and salesmen's annual joint meeting will be held April 8 in the Statler Hotel.

1 1 1

Milwaukee Elects New Members

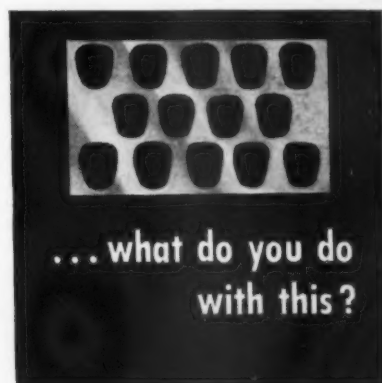
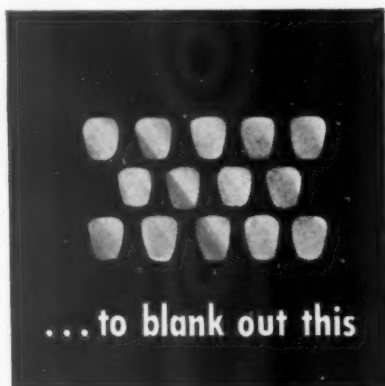
The Milwaukee Association of Purchasing Agents has announced the election of three new members, Alfred Gromacki, Wagner Iron Works, Melvin A. Olson, Midland Company, and Warren E. Graham, Hein-Warner Corporation. Emil L. Schmidt, also of Midland Company, has been elected an associate member.

1 1 1

Southwestern Conference Set For Tulsa, September 23-24

E. C. Wolf, president of the Purchasing Agents Association of Tulsa, Okla., has notified all members that the Seventh Annual Southwestern Purchasing Conference will be held September 23 and 24 at the Mayo Hotel, Tulsa. W. L. James, Stanolind Oil & Gas Company, is general chairman of the two-day meeting.

PUZZLE for Purchasing Agents:



The Best Answer:

BUY BLANKS from REYNOLDS and Scrap Your Scrap Problems!

Blanks from Reynolds Aluminum Fabricating Service save you 30% scrap loss; save you scrap handling and scrap storage expense; speed your production by eliminating rejects, work stoppages and special operations. When you buy aluminum blanks from Reynolds, scrap as shown above is remelted immediately right at Reynolds plants. There is no costly loss of time, segregation and storing, reshipment between cities or diversion of valuable metal.

Sheared blanks, sheared and pierced blanks, punch press blanks—in fact all types of semi-fabricated blanks—are available from Reynolds Aluminum Fabricating Service. For information on blanks and on completed parts and final assemblies, call your Reynolds office listed under "Aluminum" in your classified directory or write Reynolds Aluminum Fabricating Service, 2056 South Ninth Street, Louisville 1, Kentucky.

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AGENTS:**

Write for your free copy of the new 24-page "Catalog of Facilities." Get full details on the tremendous production facilities of Reynolds Aluminum Fabricating Service.



Be sure to see "Mister Peepers" every Sunday night, 7:30 EST, NBC-TV; hear "Fibber McGee and Molly" every Tuesday night, 9:30 EST & PST, NBC

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APRIL, 1953

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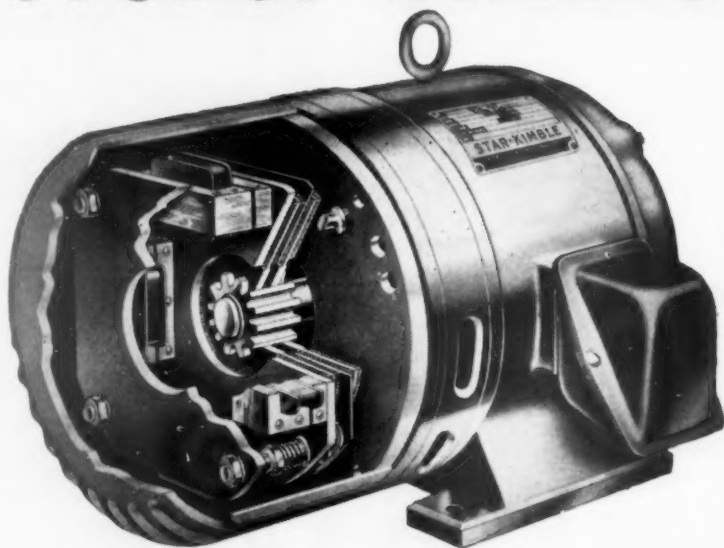
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START STOP! START STOP! START STOP! START STOP!

Instantaneous

Drag-free

STOPS! STARTS



START STOP! START STOP! START STOP! START STOP!

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**minute after minute YEAR AFTER YEAR
with Star-Kimble Brakemotors**

That extra-large brakelining area you see brings a Star-Kimble Brakemotor and its connected load to an *extra-fast stop*—as short as a fifth of a second from full speed to standstill if desired.

And the small air gap contributes to *equally fast starts*. Brake is released the instant motor current is switched on—equipment starts without drag.

That's the story of a *single* Star-Kimble stop-start cycle. And the experience of user after user proves that Star-Kimble Brakemotors maintain the same split-second stops, the same smooth starts, through hundreds of thousands of cycles. In reversing service, conventional plugging methods with a typical 5 hp motor allow only 3 starts per minute. With a Star-Kimble Brakemotor, the figure is boosted to 10!

Of course, every Star-Kimble Brakemotor is a compact, integral unit designed to save space—and give rugged, dependable performance. One manufacturer—one responsibility.

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MOTOR DIVISION
MIEHLE PRINTING PRESS AND MFG. CO.
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Big Turnout For Ladies Night Of TenneVa Association

A heavy turnout of members and guests enjoyed the Ladies Night banquet of the TenneVa Association of Purchasing Agents at the Ridgefield Country Club, Kingsport, Tenn. Each of the ladies attending were presented with a gardenia corsage. A social hour preceded the dinner and entertainment program.

E. E. Shaulis was chairman of the affair and Richard H. Alvey was master of ceremonies.

Group singing followed the dinner and Arthur R. Thompson performed some feats of magic, calling on members and guests to assist him.

1 1 1

Twin City Association Hears Ralph Buck Talk On Copper

Ralph Buck, general manager and sales manager of the Dallas Division of Revere Copper and Brass Company, was the featured speaker at the March 11 meeting of the Twin City Association of Purchasing Agents in the St. Paul Athletic Club, St. Paul, Minn. Mr. Buck spoke on "The Copper Picture Today."

Guests at the meeting included the 32 members of the night purchasing course given at the University of Minnesota, who completed the course in January.

1 1 1

Oregon Association To Elect Officers At April 14 Meeting

A new slate of officers of the Purchasing Agents' Association of Oregon will be elected at the April 14 meeting. President Don Tenney has named a nominating committee consisting of B. E. Hearn, W. H. Hayden and Ivan Horne to present a slate for the new year. The office of second vice president will be added to the slate for the first time this year. New officers will be installed in May.

1 1 1

Value Analysis Talk Given At Rhode Island Ass'n Meeting

At its February 23 meeting in the Narragansett Hotel, Providence, the Rhode Island Purchasing Agents Association heard a talk given by Larry D. Miles, Manager Value Analysis Unit, Materials Service Department, General Electric Company, Schenectady, N. Y.

"How Value Analysis in Purchasing Assists in Lowering Costs," was the subject of Mr. Miles' talk.



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*can help keep
 your production
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You cut down rejects when you use Chase Brass and Copper Alloy Wire.

Chase mills inspect every coil of wire produced. No scratches, no slivers, spills, or laps! Chase wire is of uniform temper and grain size, uniform in surface texture and color, accurate in gauge. It comes to you clean and bright.

Chase wire is available in a wide variety of alloys, shapes, sizes and tempers.

Write today for free folder "Chase Cold-Heading Extruded Brass and Copper Alloy Wire."



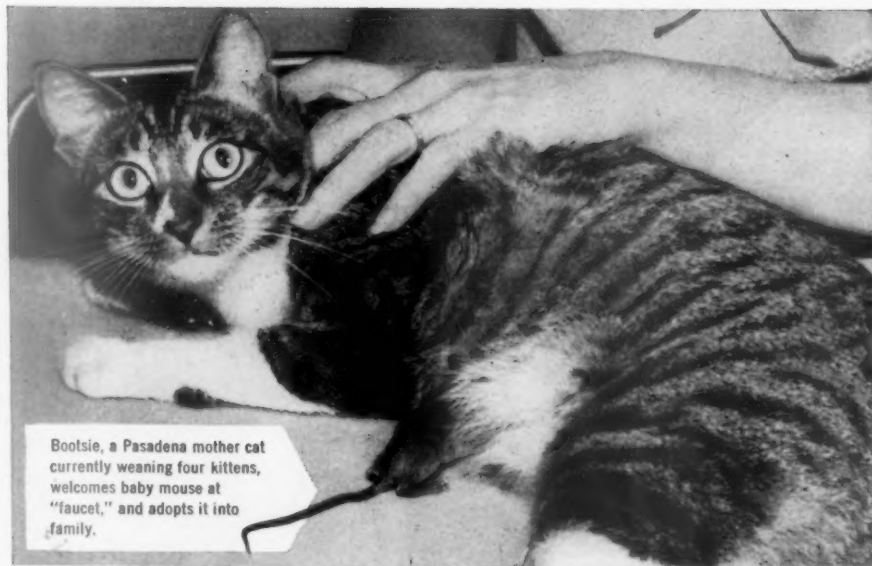
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Chicago	Houston	Newark	Rochester †	
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Unusual Care...



Bootsie, a Pasadena mother cat currently weaning four kittens, welcomes baby mouse at "faucet," and adopts it into family.

for Unusual Care on Long-Distance Moves Go the MAYFLOWER Way!

► When a family has to move its treasured possessions hundreds of miles away, they deserve "unusual care." That means extra protection, extra attention to every detail. And that's where Mayflower Service really shines, because extra precautions and refinements are standard practice. Take, for

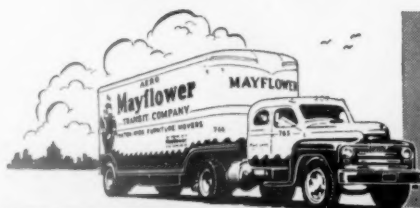


Prospective Mayflower Driver takes Visual Acuity Test devised by Purdue University.

example, the Mayflower men who perform the service. Before they are even accepted for training they must first survive thorough-going scientific tests to judge their mental and physical fitness for the important job they'll have to do. That's the kind of careful planning that makes every phase of Mayflower Service safer and easier for your personnel transfers. Your local Mayflower representative will be glad to arrange it for you!

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Mayflower's organization of selected warehouse agents provides on-the-spot representation at the most points in the United States and Canada. Your local Mayflower agent is listed in the classified section of your telephone directory.



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America's Finest

NATION-WIDE FURNITURE MOVERS

Renard Draws Big Attendance At New England Association Meeting

Many members of the New England Purchasing Agents Association and officials of their companies attended the March 9 meeting in the Hotel Vendome, Boston, Mass., to hear George A. Renard, secretary-treasurer of the National Association of Purchasing Agents, speak on "From One P.A. To Another."

At the afternoon meeting of the same day Graydon A. Stockwell, Bay State Abrasive Products Company, spoke on his company's standardization program. Mr. Stockwell is chairman of the association's Standardization Committee.

1 1 1

Study Tells How To Use, Store Electric Batteries

The January issue of the Technical Reports Newsletter published by the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C., includes a study on how to achieve improved electrical storage batteries and a labor-saving method of storing lead-acid batteries. The issue also contains various informative discussions of developments in a number of industries, among which are included the instrument and electrical industries. The January issue may be had free from the Department. Annual subscriptions are 50 cents.

1 1 1

Shell Plant Adding 10% To Nation's Benzene Output

A multi-million dollar integrated "platforming" and aromatics extractive distillation plant, which will add about 10% to the domestic output of benzene plus a large volume of toluene, has been put "on stream" at its Houston refinery, Shell Oil Company has announced.

Benzene is one of the nation's most important "building block" chemicals, used in making a wide range of products such as synthetic rubber, nylon, detergents, plastics and pharmaceuticals.

Toluene is vital to the defense program. It is the last "T" in TNT and a component of high-octane aviation fuel, as well as an ingredient of dyes, cleaning agents, enamels and inks.

Yearly output will exceed 19,000,000 gallons of benzene and 33,000,000 gallons of toluene. Aromatic and non-aromatic by-products of the

(Please turn to page 234)

Here's why The A. O. Smith Corp.

uses *Summerill*

STEEL PRESSURE TUBING



The A. O. Smith Corporation has found that Summerill Steel Pressure Tubing consistently meets their high quality tubing standards. For Summerill Seamless Tubing withstands internal pressures that would cause other tubing materials to quickly fail. It flares easily, and takes sharp bends in stride without flattening or developing an "orange peel" effect on the bend.

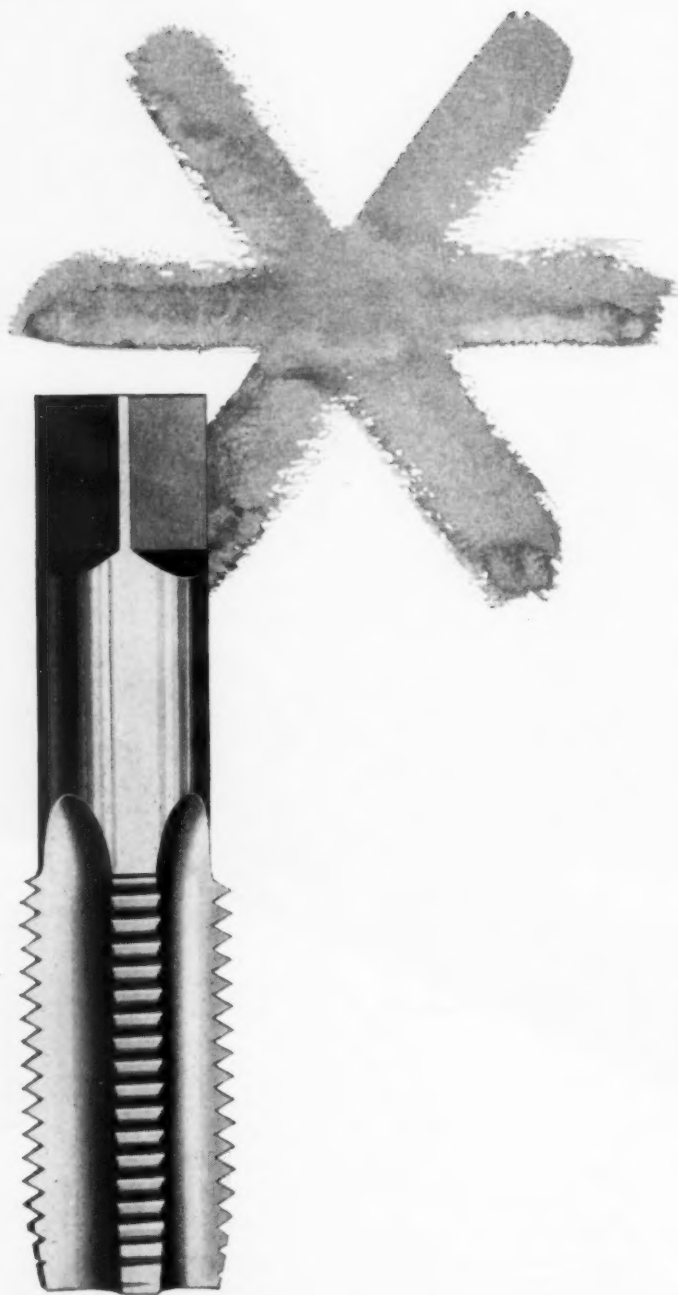
Summerill Pressure Tubing is Quality-Controlled from raw materials to finished product in one of the nation's most modern tubing

plants. Only prime raw materials are used. As a result, you can depend on Summerill for top uniform quality of product—regardless of whether you buy a single length or by the carload. *And remember this:* Not one Summerill customer has ever received a "leaker", or reported a pressure tubing failure! Summerill Pressure Tubing is available in lengths up to 38 feet. ● For further details or technical assistance, call or write: *Summerill Tubing Company Division, Columbia Steel & Shafting Company, Pittsburgh 30, Penna.*

W&D 4600



IN COLD DRAWN SEAMLESS STEEL TUBING
SPECIFY *Summerill* AND BE SURE!



Try Bay State Taps

BAY STATE TAP & DIE COMPANY • MANSFIELD MASS.

*On nearby shelves of industrial supply distributors.

(Continued from page 232)

plant are blended into aviation gasoline, motor gasoline and special products.

The installation, largest of its kind in operation in this country, uses an extractive distillation process developed by Shell. This process, in a plant recently completed by Atlas Processing Company, has proven remarkably efficient in yielding 99.9% benzene recovery. The corresponding over-all plant recovery after treating the benzene to nitration quality is 98%.

1 1 1

Computing Air Gage Indicator Reduces Chance For Error

When air gaging is applied to multiple and complex measuring problems such as checking of tapered cylindrical parts, center distances, squareness between face and bore, concentricity, etc., the standard type of air gage and indicator affords some leeway for human error by placing considerable responsibility on the operator in making calculations.

This is because the gaging set-up is complicated by the fact that there is always more than one variable involved. Since the total of two variables must be considered in arriving at the final result, it is necessary to use at least two air circuits and the operator frequently has to take readings from two indicators and then add or subtract the respective readings before the final answer can be obtained.

Through the use of the Taft-Pierce computing indicator, it is possible to remove the effect of one of the variables (diameter) on the results shown by the indicator. In this way it becomes possible to obtain readings on a single dial with a single pointer. This means greater speed, greater accuracy, greater convenience, and, inevitably, greater economy.

1 1 1

New Film Available On "Flamefoil Canvas Protection"

A 20-minute 16mm color and sound motion picture is available on free loan from the Princeton Film Center, Inc., Princeton, N. J., to furnish information about the uses of canvas in industry, commerce, public service and everyday life. Titled "Flamefoil Canvas Protection" it emphasizes protection against fire, water, weather and mildew. The importance of research and testing in canvas impregnation is effectively presented.

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*"Our records show that when a manufacturer once
discovers the uniform quality of Roebling flat spring
steel, he becomes a steady Roebling customer."*

You, too, pay for the best spring steel...make sure
you get it. Specify Roebling. John A. Roebling's Sons
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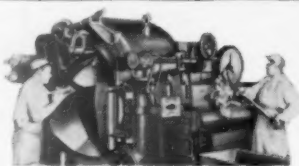
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BLDG. • HOUSTON, 6216 NAVIGATION BLVD. • LOS ANGELES, 5340 E. HARBOR ST.
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INCREASED
BEARING LIFE
FROM 2 WEEKS
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—says THE GLOBE COMPANY

"Animal acids and moisture, most harmful to ball and roller bearings prevails in the entire meat packing industry. With conventional lubricants, some of the bearings in our Roto-Cut machines did not last two weeks. Since using Ball Bearing LUBRIPLATE in machines operating continuously 24 hours a day for over two years, we have not had a single bearing replacement."

For nearest LUBRIPLATE distributor, see Classified Telephone Directory. Send for free 56-page "LUBRIPLATE DATA BOOK"... a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.

**REGARDLESS OF THE SIZE
AND TYPE OF YOUR MACHIN-
ERY, LUBRIPLATE
LUBRICANTS WILL IMPROVE
ITS OPERATION AND REDUCE
MAINTENANCE COSTS.**



Goodyear Developing New Long-Lasting Automobile Tires

If Goodyear Tire and Rubber Company of Akron, Ohio can bring their current experiments to complete fruition there will be no need to purchase automobile tires for replacement. Those coming with the car will outlast the car itself. The secret is a new tire made from synthetic rubber, which is far removed from the GR-S material of today.

Made from anti-freeze, adipic acid which is used in the nylon industry, and an ammonia derivative, used in the plastics, adhesives and dyestuffs industries, the new tire offers from two to five times greater wear resistance than the best tread rubber heretofore produced. Shoe soles and heels and heavy duty conveyor belts also can be given extraordinary wear resistance with this new material.

The company advises not to expect the miracle tire immediately on the market for general use. Before this occurs a few production bugs have to be taken out. Raw materials must be produced economically, efficient processing methods must be developed and present qualities of resilience and adhesion must be refined. The company believes that all these problems can be overcome.

1 1 1

Chase Brass & Copper Issues New Technical Catalog Bulletin

A file-size bulletin listing nearly 70 catalogs and technical handbooks on copper and brass products is available on request from Chase Brass & Copper Company, Inc., 236 Grand St., Waterbury 20, Conn. Publications in the list include descriptions of copper and copper engineering alloys; copper bus conductors; copper wire, cable and magnet wire; copper water tube and fittings; brass and copper building products; brass and copper industrial wire cloth; brass and copper rivets, etc. Bulletin is 8½" x 11".

1 1 1

New Rubber Reclaiming Plant Cuts Operating Time, Costs

The \$1,000,000 largely automatic rubber reclaiming plant just put in operation by the Boston Woven Hose and Rubber Company, Cambridge, Mass., will employ new processes which will reduce reclaiming operations from 24 to eight hours. Though the plant has capacity of

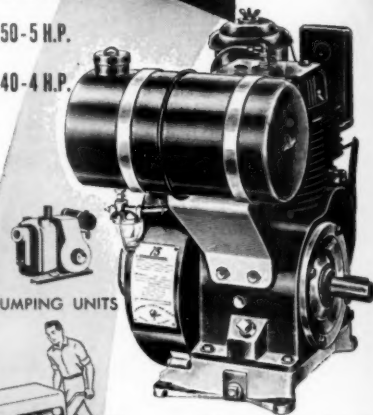
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GLADDEN ENGINES
provide reliable
power when
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MODEL 75-7 H.P.

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POWER PLANTS



More and more original equipment manufacturers are specifying Gladden engines. They find no other engine performs so well... lasts so long... and saves so much in time and money.

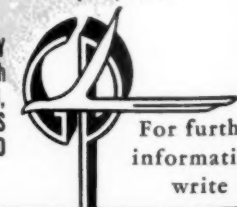
**NOW OPERATING OVER 3000 POWER BUGGIES
AND POWER CARTS IN UNINTERRUPTED SERVICE**



VIBRATORS



COMPRESSORS



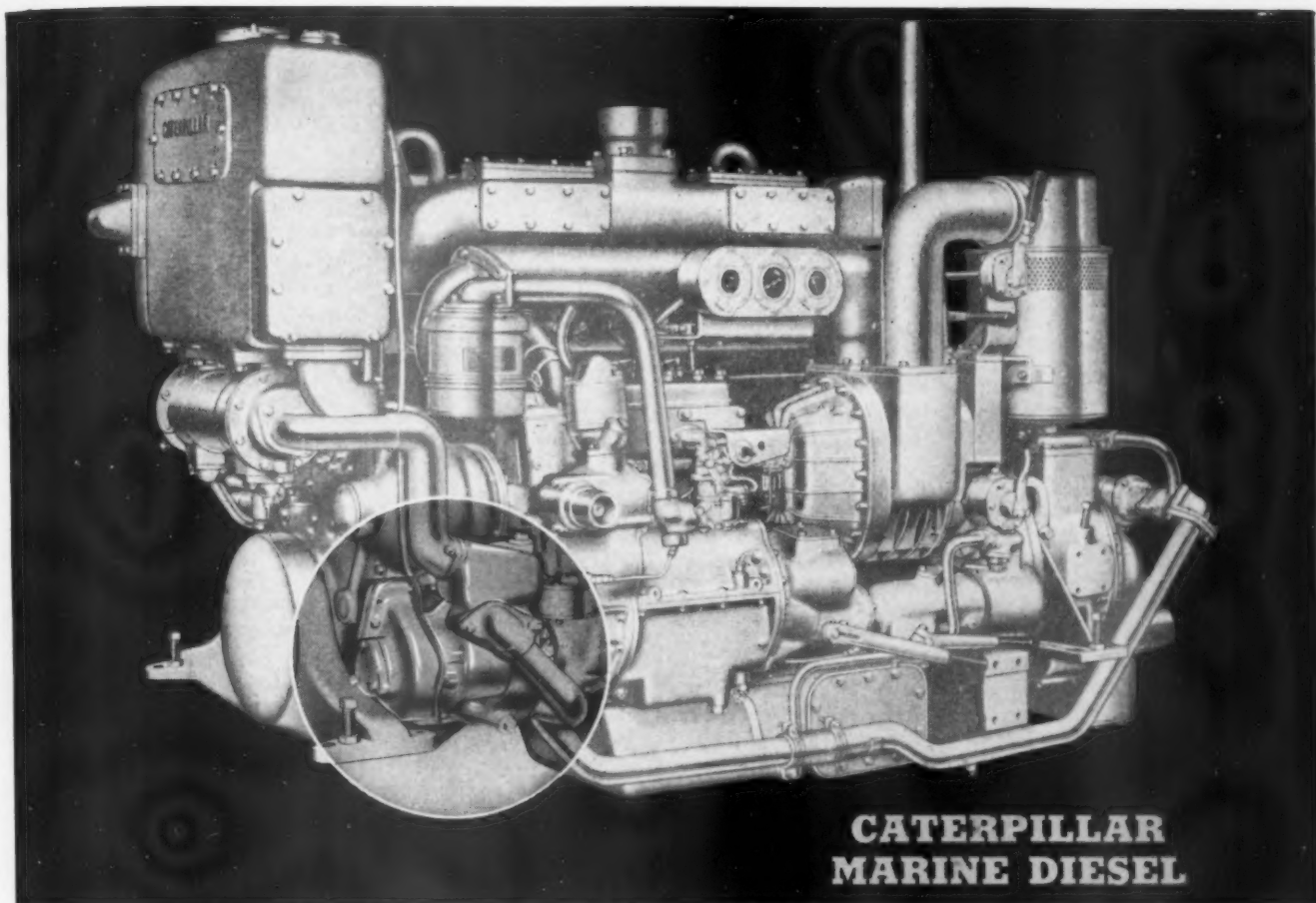
Gladden engines are being used exclusively by two large Western manufacturers on their power equipment. There is a reason for this. They work longer hours and do more jobs for a lower investment than any other gasoline engine on the market today.

Gladden engineers will adapt these engines to special installations or requirements upon request...

NEW KANSAS CITY
BRANCH, 10 West 19th
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CORPORATION**

Now In the 33rd Year of Engine Building
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National Bearing Castings Help Cool "Cat" Engines

National Bearing Division's foundry skill permitted a new design in pump efficiency and compactness.

This extremely compact 170 horsepower Marine Diesel Engine, with special coolant pump, is a new design in efficiency by Caterpillar Tractor Co., Peoria, Illinois, makers of famous "Caterpillar" Diesel Engines, Tractors, Motor Graders, and Earthmoving Equipment.

Unusual size restrictions were specified in the coolant pump housing. It had to be of tough, durable bronze, highly resistant to corrosion by raw sea water, and painstakingly cast as the housing component for a very compact coolant pump, capable of delivering 100 gallons per minute. The housing casting design was unusually intricate, with wall thicknesses exactly $\frac{1}{4}$ " in some areas, $\frac{7}{32}$ " in others. The mold for each casting required 14 cores—all perfectly positioned, as the

slightest misalignment would be ruinous. And, housings had to be cast to minimize machining.

"Caterpillar" selected National Bearing Division to provide these special bronze pump housings. We were chosen for proven ability to produce top quality castings, our unique core facilities, and our experience in applying over 50 years of specialization to customers' problems.

Our bronze pump housing castings met—and continue to meet — "Caterpillar's" specifications for quality, tolerance, and minimum machining in every respect.

If your product includes copper, bronze, or other copper-base castings, it will be worth your while to investigate National Bearing Division. We produce copper-base castings, large or small, with any degree of finish, to precision specifications. And, because we are set up for production runs, we can probably save you dollars.

Write to National Bearing Division for complete information and your copy of our catalog.

AMERICAN

Brake Shoe

COMPANY

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4940 Manchester Avenue • St. Louis 10, Mo.

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This **Bond** 36-A Caster
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1536-A Series—
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Caster equipped
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Rubber Tread Wheels.

Ask your industrial distributor...he knows

that Bond 36-A Series Casters fit most service requirements. These universally used, completely dependable casters incorporate a fork, base and king bolt construction that distributes the load *evenly*. Two ball races of almost equal diameter, set one below the other, permit *easy swiveling*. All moving parts in the ball race are pressure lubricated.

Remember, *your best buy is Bond*—and your distributor will be glad to help you select the right Bond casters for your jobs. Ask your distributor for a copy of the Bond Catalog K-38 or write direct.

BOND FOUNDRY & MACHINE COMPANY
Manheim, Pennsylvania



Bond 1-A Series—
Stationary Truck
Casters give depend-
able service as com-
panion casters to the
Bond 36-A Series
Casters.

(Continued from page 236)

7,200 tons of reclaimed rubber annually, only three shifts of 10 men each are required to keep the plant functioning on a 24-hour basis. John M. Bierer, president of the company, stated that there was considerable evidence that improved reclaiming processes held promises for lowered costs in mechanical rubber goods.

The new process, described as a "high pressure neutral system," employs automobile tires and tubes, plus various types of scrap from rubber manufacturing. The new process, as yet undisclosed, not only produces a high quality devulcanized grade of rubber and synthetic (GR-S) but also recovers a considerable quantity of cotton and rayon cord and steel wire from automobile and truck tires. It is essentially an automatic system from the first step, cracking, to the final finished reclaim. Reclaimed rubber possesses some properties making it superior to natural rubber, not least of which is that it requires less power for processing.

Synthetic Gasoline Still Uneconomical, Study Shows

The National Petroleum Council has just released the report of a thorough study, on which it spent \$500,000, to discover the true facts about current proposals to manufacture gasoline synthetically from coal or shale oil. The Bureau of Mines, for example, has appropriated over \$74,000,000 since 1944 to develop such techniques. The Council's conclusion is that proposals for making gasoline from coal and shale oil are "definitely uneconomical under present conditions and the need for a synthetic fuel industry in this country is still in the distant future."

When the need does arise the Council states that it is likely that entirely new techniques may be available which will make synthetic gasoline cheaper than they would be today. With present techniques, gasoline made from shale oil would cost the wholesale purchaser 14.7 cents; that made from coal by the Fischer-Tropsch method would cost 29.4 cents while that made by the hydrogenation process would cost 36.3 cents. This compares with the current wholesale price (without taxes, etc.) of 12 cents at the refinery for gasoline made from crude petroleum. The full report can be had from: The National Petroleum Council, 601 Commonwealth Building, 1625 K St., N.W., Washington 6, D. C.



Ford Motor Company chooses **YALE***

MATERIALS HANDLING EQUIPMENT

*Registered Trade Mark

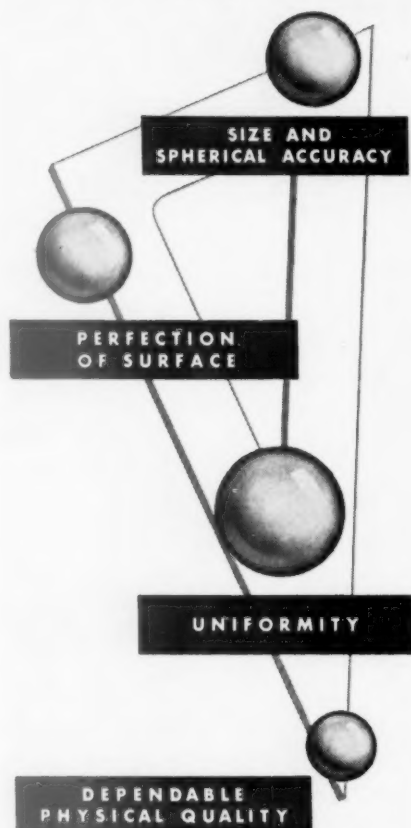
Yale & Towne Manufacturing Company, Philadelphia 15, Pa.

Gas, Electric, Diesel Lift Trucks • Worksavers • Hand Trucks • Hand and Electric Hoists • Pul-Lifts

• Just as the Ford Motor Company's slogan is "Ford's Out Front!", so, too, Ford is out front when it comes to maintaining a high degree of efficiency in its manufacturing operations. In keeping with this slogan and with the exacting demands made on all operating equipment in the plant, Ford has specified YALE Electric Trucks as one of the production tools for the mammoth new Ford foundry located in Cleveland, Ohio.

When the Ford Motor Company chose YALE trucks, they knew that it would result in lightening the burden of workers . . . hasten output . . . and cut down on operating costs! It is this kind of confidence in the endurance and reliability of YALE trucks as shown by Ford—in common with other leading manufacturers—that leads users of materials handling equipment, from giant Ram Trucks to compact Worksavers, to rely on dependable YALE industrial Lift Trucks and Hoists.

from any angle



STROM *is your* BEST BALL BUY

If you have a metal ball problem, why not let Strom solve it for you. Whether for precision ball bearings or for one of many other ball applications... Strom will supply the *right* ball to meet your requirements. For more than a quarter century, industry has looked to Strom for metal balls of unsurpassed quality.

Strom
STEEL BALL CO.

Largest Independent and Exclusive
Metal Ball Manufacturer

1850 So. 54th Ave., Cicero 50, Ill.

Portable Surface Resistance Indicator Used By Spotweld Co.



A General Electric portable surface resistance indicator at the Spotweld Company, Cleveland, Ohio, has "taken the guesswork out of good welding," by providing a rapid and accurate measurement of the resistance between pieces of metal to be resistance welded. Spotweld fabricates aluminum parts for aircraft engine covers, refrigerator

units for trucks, aluminum tie rails, and parts for vending machines. Using the G-E device, the company says it can check enough pieces in 15 minutes to last through a 12-hour welding period.

In operation, pieces of metal are placed between the jaws of a sample holder, desired pressure is applied, and surface resistance is indicated on a microammeter.



PLYMOUTH
Rubber
Bands
OUTSTRETCH
OUTLAST
ALL OTHERS



**PROMPT
DELIVERY**

- Bands for Every Purpose
- Saves Time and Labor in Production
- We'll Make Them for Your Special Needs

NATIONALLY DISTRIBUTED . . . AVAILABLE AT YOUR REGULAR SUPPLIERS

All Plymouth Standard Bands Made to Federal Specifications

PLYMOUTH RUBBER COMPANY, Inc., Canton, Mass.

Sure Steps to PROTECTION!



Sparks at a screw machine ignited cutting oil to start this fire that destroyed the Aluminum & Brass Co., Lockport, N. Y. Loss \$312,000.

BUFFALO
better-built

DRY CHEMICAL FIRE EXTINGUISHER

Quick action with Buffalo Dry Chemical Extinguishers can stop disastrous industrial fires like this when they start! And "quick action" is easy when Buffalo Dry Chemical Extinguishers are close by. They give instant protection against all flammable liquid and electrical fires by releasing a heat-resistant, flame-suffocating, chemical cloud-like stream, up to 20 feet. The insulating effect of the chemical cloud allows the operator to get to the seat of the fire. Buffalo powder produces 1100 times its volume in nontoxic, flame-killing gas on contact with flames.

Buffalo manufactures a complete line of extinguishers for positive protection from every fire hazard. Order Buffalo fire protection today! Consult your Classified Telephone Directory or write for your nearest Buffalo distributor.

UNDERWRITERS' LABORATORIES APPROVED

BUFFALO FIRE APPLIANCE

C O R P O R A T I O N
D A Y T O N 1, O H I O

keep cool naturally



Breeze-Condition with Emerson-Electric Oscillators



Finger-tip Oscillation Adjustment

Finger-tip adjustment from non-oscillating position to any range of oscillation up to 90° is obtained by simply turning the knurled rim of the adjusting case. Adjustment is instantaneous and is accomplished without tools of any kind, and with absolute safety.



Stores, factories, institutions and offices everywhere keep cool *naturally* . . . they circulate the air with Emerson-Electric oscillating fans! These dependable 12" and 16" Overlapping-blade and Parker-blade models have exclusive oil-tight bearings and three-speed

sliding switch in base. All carry the well-known Emerson-Electric 5-Year Guarantee. Specify Emerson-Electric Fans . . . get *natural* breeze-conditioning. (All models have ornamental guards. Overlapping-blade fans also available with spiral safety guards, as illustrated).

THE EMERSON ELECTRIC MFG. CO. • St. Louis 21, Mo.

FREE FAN CATALOG!

See 9 new models for '53 . . . get the facts about the most complete fan line in America. Write for Catalog No. 706.



EMERSON
FANS • MOTORS



ELECTRIC
APPLIANCES

Titanium Outlook Excellent Official Tells Engineers

Titanium production on a tonnage basis has arrived. C. I. Bradford, director of operations of Rem-Cru Titanium, Inc., recently told members of the Society of Automotive Engineers.

"During the past few years an American industry-defense department team has performed an unprecedented job in giving birth to and establishing an entirely new titanium metal industry," he said.

Stating that the millions of dollars industry and government have been spending each year are bringing results, Mr. Bradford cited that following titanium advances as the year 1952 ended:

1. The industry jumped from titanium ingots of poundage size to tonnage size. Two-ton ingots are now being made.
2. Up to 5 tons per day of metal are being produced; facilities for 20 tons per day are under construction.
3. Continuous wide strip processing is a reality.
4. Reliable alloys are now available in virtually all the standard forms in which stainless steel is produced.
5. Quality is being brought under control.
6. Production applications are now established in aviation and other industries.

"The larger ingots such as the 1200 to 4000-pounders are now meriting tonnage processing at Rem-Cru for at least two reasons," Mr. Bradford reported. "First is lower processing cost per pound and second is better quality." Mr. Bradford referred to a 4-high hot reversing mill with automatic coilers as an example of modern processing equipment available to Rem-Cru at Midland, Pa., through one of its parent companies, Crucible Steel Company of America.

"Using this and associated continuous strip equipment, Rem-Cru last summer produced the first successful wide, thin titanium strip produced anywhere measuring 460 feet long, 36 inches wide and 15-thousandths of an inch thick," Mr. Bradford stated. Last fall Rem-Cru turned out the first two-ton ingot of titanium containing \$20,000 worth of the metal.

As a further indication of the growth of the industry in the past five years, Mr. Bradford pointed out that in 1948 only 10 tons of the pure titanium-making sponge were pro-

(Please turn to page 244)

HERE COMES HELP!

from your nearby Reynolds Aluminum distributor



Reynolds is putting forth every effort to ease your aluminum-buying problems. To meet the growing demand Reynolds Metals Company and other U. S. producers have already started on another vast expansion program which will greatly increase the country's aluminum production capacity.

To meet your immediate problems the nearby Reynolds distributor listed below is

doing his level best to fill orders from limited stocks.

You can also count on his assistance and guidance in selecting temporary alternate materials. He will apply all of his experience and energy to helping you out. Present your procurement problems to him. Now as always he will give you the kind of service you need and want.

YOUR REYNOLDS DISTRIBUTOR IS LISTED BELOW

ALABAMA

Arnold-Brown Metals & Supply Co.,
Birmingham
Southern States Iron Roofing Co.,
Birmingham

CALIFORNIA

Clingan & Fortier, Inc.,
Fresno, San Francisco and Vernon
(Ingot also)
Braico Metals, Inc.,
Los Angeles
Tay-Holbrook, Inc.,
San Francisco
Union Hardware & Metal Co.,
Los Angeles
United States Steel Supply Div.,
Los Angeles
Western Metal Supply Company,
San Diego

COLORADO

Marsh Steel Corporation,
Colorado Springs and Denver
Salt Lake Hardware Co.,
Grand Junction

CONNECTICUT

American Steel & Alloys Corp.,
Hartford

DISTRICT OF COLUMBIA

Lyon, Conklin & Co., Inc.,
Washington

FLORIDA

Horne-Wilson, Inc., Jacksonville,
Miami, Orlando and Tampa
Southern States Iron Roofing Co.,
Jacksonville, Miami, Orlando and
Tampa

GEORGIA

Southern States Iron Roofing Co.,
Albany, Atlanta, Augusta
and Savannah

IDAHO

Salt Lake Hardware Co.,
Boise

ILLINOIS

J. G. Braun Co., (Architectural
only) Chicago
Sipi Metals Corp., (Ingot Only)
Chicago
United States Steel Supply Div.,
Chicago
Benjamin Wolff & Co., Chicago

INDIANA

Hubbell Metals Inc.,
Indianapolis

KENTUCKY

Southern States Iron Roofing Co.,
Louisville

LOUISIANA

Southern States Iron Roofing Co.,
New Orleans

MARYLAND

Cleaman Bros., Inc., Baltimore
Lyon, Conklin & Co., Inc., Baltimore

MASSACHUSETTS

Bay State Refining Co., (Ingot
only) Chicopee Falls
Arthur C. Harvey Company, Boston
Pratt & Inman, (Wire, rod, bar,
structurals) Worcester

MICHIGAN

Kasle Steel Corporation, Detroit

McDonnell Bros., Inc., (Architectural
only) Detroit
Milton A. Meier Co., (Ingot only)
Detroit and Grand Rapids

MINNESOTA

Vincent Brass & Copper Co.,
Minneapolis

MISSOURI

Hubbell Metals Inc.,
North Kansas City and St. Louis
Marsh Steel Corporation,
North Kansas City

NEW JERSEY

Barth Smelting Corp.,
(Ingot only) Newark
Edgcomb Steel Corporation, Hillside

NEW YORK

Barth Smelting Corp.,
(Ingot only) Newark, N. J.
J. G. Braun Co., (Architectural
only) New York

Edgcomb Steel Corporation,
Hillside, N. J.
Rochester Smelting & Refining Co.,
(Ingot only) Rochester

NORTH CAROLINA

Southern States Iron Roofing Co.,
Raleigh

OHIO

The Atlas Metal Co., (Ingot only)
Cleveland
G. A. Avril Smelting Corp.,
(Ingot only) Cincinnati
The Hamilton Steel Co., Cleveland
Mutual Manufacturing & Supply Co.,
Cincinnati
Vorys Brothers, Inc., Columbus

OKLAHOMA

Vinson Supply Co., Tulsa

OREGON

Woodbury & Company, Coos Bay,
Eugene, Medford and Portland

PENNSYLVANIA

Athos Steel Service Co., Philadelphia
Levinson Steel Sales Company,
Pittsburgh
Merchant & Evans Co., Philadelphia
Potts-Farrington Company,
Philadelphia
Nathan Trotter & Co., Inc., Philadelphia

SOUTH CAROLINA

Southern States Iron Roofing Co.,
Columbia

TENNESSEE

Southern States Iron Roofing Co.,
Memphis and Nashville

TEXAS

Mancrief-Lenoir Mfg. Co.,
Dallas, Harlingen, Houston,
Lubbock, San Antonio and Temple
Vinson Supply Co.,
Dallas, Odessa and Snyder

UTAH

Salt Lake Hdw. Co., Salt Lake City

VIRGINIA

Southern States Iron Roofing Co.,
Richmond

WASHINGTON

Joseph T. Ryerson & Son, Inc.,
Seattle and Spokane
Clingan & Fortier, Inc., Seattle

WISCONSIN

Benjamin Wolff & Co., Milwaukee

LOOK UNDER "ALUMINUM" IN YOUR CLASSIFIED TELEPHONE DIRECTORY

REYNOLDS



ALUMINUM

MODERN DESIGN HAS ALUMINUM IN MIND

For Rapid Handling of Bulk Material

"CLIMAX" Scoop Truck

Ideal for one-man movement of grain, coal, or other bulk stored material particularly from freight cars or trucks. Increases speed six to ten times. The scoop is drawn-pressed from a single sheet of 10 gauge steel — an exclusive Lansing feature. Select northern hardwood handles, formed wheel housing and choice of wheels provide a strong, durable, trouble-free unit. Capacity, 200 pounds of coal, 2½ bushels of grain.



Ask Your Distributor or Write For Details Today

LANSING CO.
LANCO MATERIAL HANDLING EQUIPMENT

LANSING, MICHIGAN

(Continued from page 242)

duced as against an estimated output of 1,000 tons in 1952. Steps are being taken to increase this level of production to 22,000 tons of sponge per year by 1955, he said.

Sees Wide New Markets

Referring to costs, Mr. Bradford pointed out that "when titanium is reduced to the point where it is directly competitive cost-wise with other structural materials, the entire transportation and moving machinery fields, as well as others, will open up as potential markets."

The new light, strong, corrosion-resistant metal is now finding application, Mr. Bradford stated, in such civilian and military services as aircraft power plants, airframe skins and structures, industrial equipment, ordnance and marine equipment, among others.

"Furthermore, titanium's relatively untapped alloy resources promise even more rapid expansion into new tonnage applications in the future," Mr. Bradford stated.

"The enormous progress made and the millions of dollars spent on titanium by the industry-government team is evidence of the willingness and the ability available to grasp an opportunity and do a job even though the stakes and risks may be high," Mr. Bradford told the gathering. "The successful full-scale development of the titanium industry will help materially in insuring the future industrial development of our country and, in turn, its defense."

1 1 1

Firestone Tire & Rubber Develops Fast-Curing Neoprene Cement

Because no stable fast-curing Neoprene cement had been developed, practically all Neoprene-coated inflatable products, such as inflatable lifeboats, life vests or floats have hitherto had to be replaced once they were punctured or torn in service. A discovery of the Firestone Tire & Rubber Company, Akron, Ohio, now makes this unnecessary. It has solved the problem that baffled scientists since the origin of synthetic rubber.

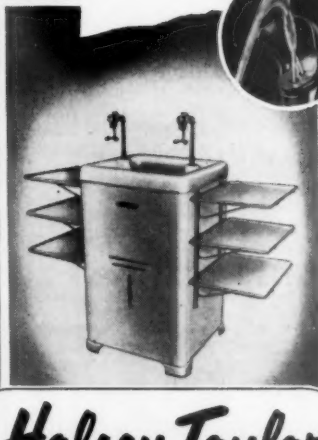
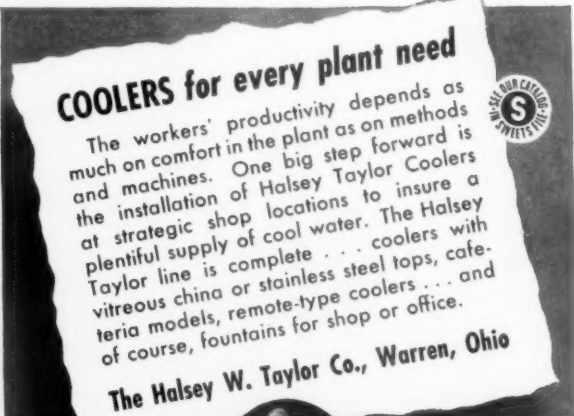
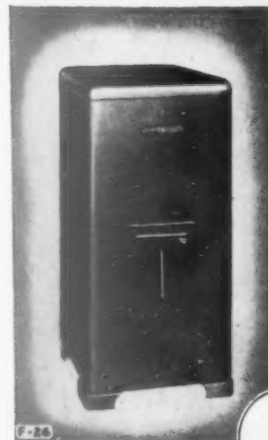
Hitherto, the best manufactured rubber cements had one characteristic failing. They jelled in a very short time after exposure to air and when the product was eventually assembled, it had to be cured or vulcanized with heat to get a satisfactory bond. The new Firestone ce-

(Please turn to page 246)

COOLERS for every plant need

The workers' productivity depends as much on comfort in the plant as on methods and machines. One big step forward is the installation of Halsey Taylor Coolers at strategic shop locations to insure a plentiful supply of cool water. The Halsey Taylor line is complete . . . coolers with vitreous china or stainless steel tops, cafeteria models, remote-type coolers . . . and of course, fountains for shop or office.

The Halsey W. Taylor Co., Warren, Ohio

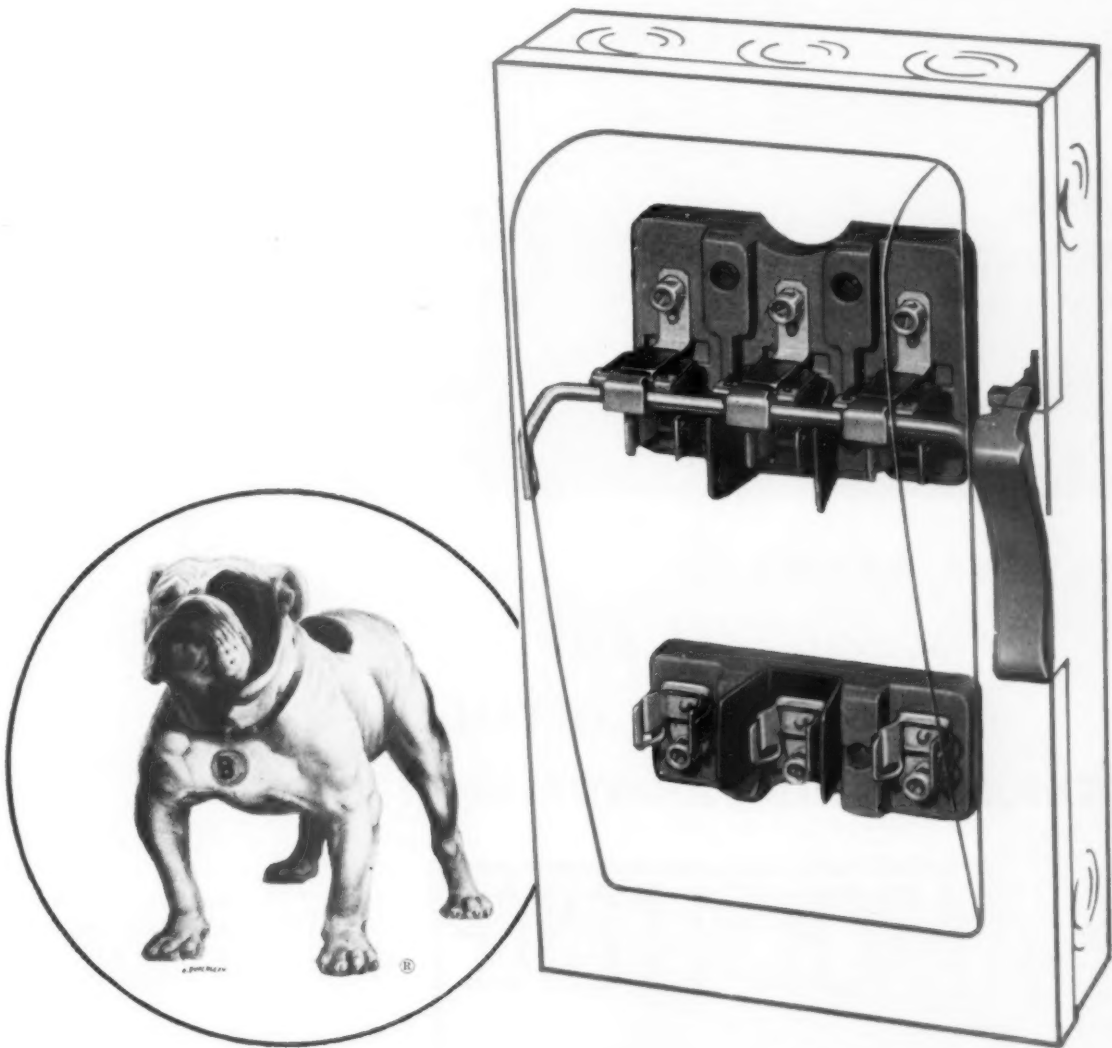


MODERN

Halsey Taylor

COOLERS

BULLDOG VACU-BREAK SAFETY SWITCH



It's a Thoroughbred--and Looks it!

A THOROUGHbred — whether a dog or a safety switch — always looks the part because it's better on all points. In the Bulldog Vacu-Break Switch — the thoroughbred of safety switches — the trim, functional exterior is the direct result of fine engineering and design of interior components.

LOOK INSIDE . . . and see how Bulldog's exclusive Vacu-Break with its practical, compact design, gives you

both extra safety and clean-lined tailoring. See how all parts and assemblies are engineered as a perfectly co-ordinated unit to assure maximum efficiency, safety and economy.

WRITE TODAY FOR FREE Bulletin B-250, and get complete details on Bulldog Vacu-Break Safety Switches. Bulldog Electric Products Company, Dept. P-43, Detroit 32, Michigan.

BULLDOG
ELECTRIC PRODUCTS COMPANY

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THE LINE BETWEEN
Production AND
destruction **OFTEN**
CARRIES THIS FAMOUS SIGN!

ANCHOR FENCE

Anchor Fence provides one of the surest ways to guard your production against destruction by thieves, vandals and agitators.

All of your productive factors—your plant, equipment, vehicles, materials and employees—are safe within the area guarded by dependable Anchor Fence.

At the same time, Anchor Fence smoothes the flow of vehicular traffic, the loading and unloading inside the yard.

But Anchor Fence keeps those who would destroy your profits outside where they belong.

But be sure to look for the orange-and-black name-plate that identifies all genuine Anchor Fence. For that name-plate is your assurance of the finest in industrial fencing.

Write for Additional Information

Ask for Anchor's fact-packed *Industrial Fence Catalog*. Or, if you prefer, invite one of our thoroughly informed engineers to submit recommendations—without any obligation, of course. Address: ANCHOR POST PRODUCTS, INC., 6615 Eastern Avenue, Baltimore 24, Maryland.

Anchor Fence

Division of ANCHOR POST PRODUCTS, Inc.

(Continued from page 244)

ment is thermosetting and makes a bond between the Neoprene coating on the fabric, after the repair is made, that is stronger than the fabric itself.

The bond gets stronger as the temperature increases. Tension tests have been successfully conducted on patched fabrics in temperatures up to 150 F. As the tension increases the fabric breaks down but the cement holds firm. The new cement is likewise not affected by cold. The new fast-curing cement is complete within itself and requires no accelerators or additives of any kind. Once applied it forms an inseparable bond within a few hours. Currently the greatest use of the cement is in the emergency repair of fighting equipment in Korea but it has countless industrial uses in the making of Neoprene coated products.

High Alloy Seamless Tubing Formed by "Hot Extrusion"

A new process of "hot extrusion" to form high-alloy seamless steel tubing and shapes was exhibited recently for the first time by officials of National Tube Division of United States Steel Corporation at its plant.

Mr. John E. Goble, President of National Tube Division, led newspapermen and company officials on a tour of the new facilities.

With this new facility in operation, Mr. Goble explained, the Gary Plant now manufactures seamless tubing from tough stainless steels. Heretofore high alloy steels resisted such piercing operations. Using different dies, the same press makes special steel shapes which in the past defied all rolling methods. Output of the press is expected to be approximately 2,000 tons of tubing and shapes a month, he said.

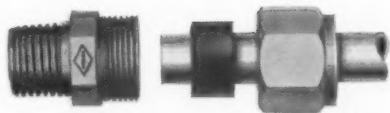
The process, named "Ugine Sejournet" after its French inventor, utilizes the same principle as pressing toothpaste from a tube. In this case the "toothpaste" is a steel slug heated to 2,250 degrees to make it plastic. The "squeeze" comes from a 2,500-ton hydraulic press which forces the steel slug through a die to convert it to tubing.

So great are the heat and pressure required in the new process that glass, which is rammed into the press ahead of the steel, melts and becomes a lubricant. In addition, a knitted fiber-glass "stocking" is fitted to the mandrel which pierces and shapes the inside of the tube as it travels through the die.

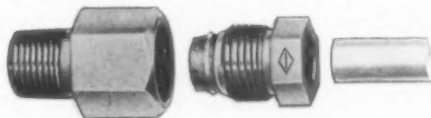
**Whatever your
Tubing Connection
Problems . . .**

**Your Imperial Distributor
has the Answer!**

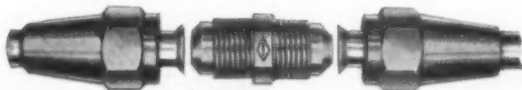
**VIBRATION
FASTER ASSEMBLY
TUBE MOVEMENT
HIGH PRESSURE
SHUT-OFF VALVES
ALUMINUM INSTALLATIONS
TUBING TOOLS**



IMPERIAL FLEX FITTINGS — The tube coupling with the vibration and shock absorbing sleeve.



IMPERIAL HI-DUTY FITTINGS — Unsurpassed for speedy, low-cost assembly. Withstands vibration. No loose sleeves to contend with. No flaring.



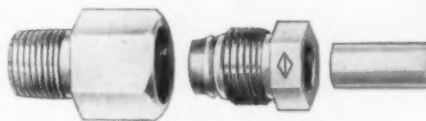
IMPERIAL FLARE FITTINGS — Both standard and heavy-duty types. Withstands severe tensile pull and high pressures.



IMPERIAL COMPRESSION FITTINGS — Simple, efficient, economical.



IMPERIAL FLEXIBLE HOSE and FITTINGS — For use where there is tube movement in lines for oil, grease, air, liquids, etc.

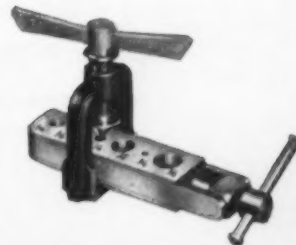


IMPERIAL ALUMINUM HI-DUTY FITTINGS — Ideal for all-aluminum installations. Lightweight, strong, good corrosion resistance.



IMPERIAL SHUT-OFF VALVES—2, 3 and 4-way. HI-DUTY and standard types.

IMPERIAL TUBING TOOLS
A complete line of the leading tools for cutting, flaring, bending, reaming and swedging tubing.



See Your Industrial Distributor • Ask for Catalog No. 350

IMPERIAL

Pioneers in Tube Fittings and Tube Working Tools

THE IMPERIAL BRASS MFG. CO.

512 S. Racine Ave., Chicago 7, Ill. In Canada: 334 Lauder Ave., Toronto, Ontario



Important *Announcement* To You!!!

WIRE-BRAIDED RUBBER HOSE IN *Economy* LENGTHS

Now! From the world's newest, most modern equipped factory comes a complete line of wire-braided rubber hose. Made in lengths that are economically adaptable to your requirements!

Republic WIRETEX Hose has all the desirable characteristics of flexible, high-quality rubber hose. It bends naturally to fit any connection. It's not weakened by vibration or flexing. It resists a wide span of temperature variance between—40° F. and +200° F. It's oil, grease and abrasion-resistant and won't rust or corrode.

Republic WIRETEX Hose is continuously reinforced with multiple braids of wire that maintain diameter dimensions despite high-pressure surges from 400 to 5,500 p.s.i. Republic WIRETEX Hose is available with either rubber or textile covers. Get the facts today! Whenever selection requirements for high, medium or low-pressure carriers for any gases or liquids demand hose of great strength, flexibility and long life, your answer is Republic WIRETEX!



REPUBLIC RUBBER DIVISION

LEE RUBBER & TIRE CORPORATION, YOUNGSTOWN 1, OHIO

INDUSTRIAL RUBBER PRODUCTS

Vinyl Plastic Electrical Lead-Wire Lasts Longer

Scintilla Magneto Division, Bendix Aviation Corporation, Sidney, N. Y., has developed a lightweight vinyl plastic impregnated high tension lead-wire that will not deteriorate from the continual contact with ozone from electrical discharges and heat from the hot manifolds of airplane engines. Carrying high voltage from the transformer coil to a spark plug, the lead wire consists of multiple layers of nickel braid with a plastic made from B. F. Goodrich Chemical Company's Geon vinyl paste resin sandwiched between each layer.

The new assemblies replace lead-wires which formerly were nickel braid covered with molded rubber and a flexible metal tubing insert to provide moisture and water protection to enclosed electrical wires. Months of experimentation showed that an inner lining of vinyl plastisol between the nickel braid gave the strong, waterproof, ozone and heat resistant protection to lead wires in airplane engines that have to be serviceable in both extremely high and low temperatures.

The hydrostatic resistance of the vinyl plastisol and nickel braid combination is such that it is no longer necessary to have the flexible tube insert to provide protection against water and moisture. This reduces the total weight of the lead wire and makes it more flexible. By having the nickel braid on the outside of the lead wire, the heat from the hot manifold is partly reflected rather than absorbed into the wire assembly.

♦ ♦ ♦

Lincoln Electric Publishes New Guide To Blueprint Reading

The fourth edition of "Simple Blue Print Reading with Special Reference to Welding and Welding Symbols" has been announced by the publishers, Lincoln Electric Company, Cleveland 17, Ohio. The book, containing 200 pages with over 200 illustrations makes a simplified approach to mastering the reading of blue prints. Using a simple welded base as a study object, an explanation is made in step-by-step fashion of how the "sign language" of blue prints is used to transmit information. Large clear drawings are used to illustrate the explanation. Size is 6" x 9" with stiff board cover at \$1.00 delivered anywhere in the U.S.A.

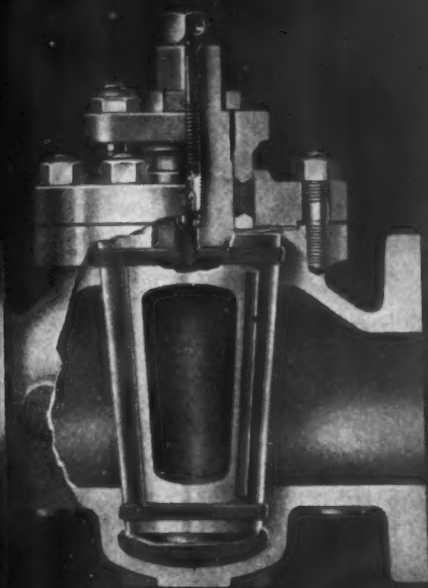
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LUBRICATED PLUG

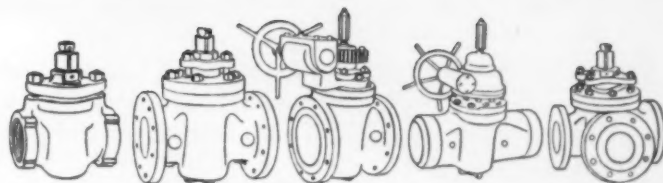
COMPLETE LINES OF LUBRICATED PLUG VALVES

Because of the wide range of services to which Lubricated Plug Valves can be adapted, they may be classed as "all-purpose" valves. Walworth manufactures complete lines of Lubricated Plug Valves in a variety of types and materials for working pressures up to 5,000 psi and for vacuum services. Sizes range from 1/2 to 30 inches. Write for descriptive literature.

Walworth also manufactures complete lines of gate, globe, angle, and check valves made of steel, bronze, iron, and special alloys.

Walworth valves, pipe fittings, and pipe wrenches total approximately 50,000 items and are sold through distributors all over the world.

Walworth engineers will be glad to help you with your problems. Call your local Walworth distributor, nearest Walworth sales office, or write to our General Offices, 60 East 42nd Street, New York 17, New York.



Illustrated in section is a Walworth No. 1700F Regular Gland Type, Wrench Operated, Steeliron, Lubricated Plug Valve. This particular line of valves has a working pressure rating of 200 psi at 150F or 125 psi at 450F. Sizes range from 1/2 to 8 inches. Other Walworth Lubricated Plug Valves include Single Gland and Ball Bearing types. They are available for a variety of working pressures.

For best results use Walworth Lubricants and Walworth High Pressure Lubricant Guns.

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Use the prices and test data tabulated below to compare Imcor reinforced plastic sheets with materials you are presently using. You'll find all four Imcor standard sheet grades offer exceptional features at remarkably low prices. That's because Imcor standard grades weigh less per unit volume. Excessive amounts of "fillers" aren't used—you get higher property values and more material for your money. All standard grades are reinforced with glass mats for top vari-directional strength. They're ideal for electrical insulating, supporting, and structural work in all types of equipment.

	IMCOR GRADE GMB-1	IMCOR GRADE GMB-2	IMCOR GRADE GMB-3	IMCOR GRADE GMH-1	YOUR PRESENT MATERIAL
*Price per 36" x 36" Sheet, 1,000 lb Quan.	\$3.34 (1/32")	\$8.10 (1/8")	\$10.19 (1/8")	\$10.45 (1/8")	
Std. Thicknesses, in.	1/32	1/16-1	1/16-1	1/16-1	
Tensile Strength, psi	8,000	12,000	19,500	8,500	
Impact Izod, ft lb	10	10	18	6	
Dielectric Strength, VPM	400	325	325	350	
Temperature Limit, °F	325	325	325	420	

*Prices subject to change without notice.

GRADE GMB-1 is a Class B electrical insulation with top electrical properties designed for thin sheet applications such as relay build-ups, transformer barrier insulation, and thin motor slot wedges. Punches easily.

GRADE GMB-2 is a general purpose Class B insulation offering the best combination of low price, good electrical properties, and ease of fabrication.

GRADE GMB-3 is an extra tough Class B insulation for rugged service. High-tensile and high-impact strengths make it useful for motor slot wedges and structural parts, such as terminal strips.

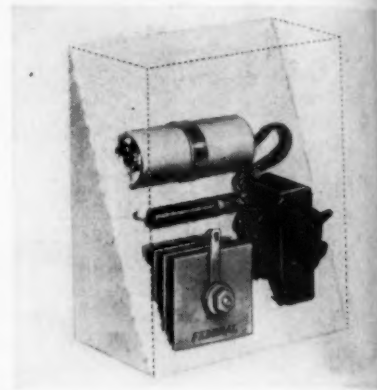
GRADE GMH-1 is suitable for Class H insulation and is rated to 420°F, yet its cost is comparatively low. Tests show that strength increases with heating cycles.

Get more information about these standard Imcor glass mat reinforced plastic sheet grades as well as special grades. Technical Bulletin B-126 and complete prices will be sent promptly by your nearest IMC office.

INSULATION		MANUFACTURERS CORPORATION		ELECTRICAL INSULATION	
*CHICAGO 6 565 W. Washington Blvd. Phone Central 6-7320	*CLEVELAND 14 1231 Superior Ave., N. E. Phone Superior 1-2310	DAYTON 2 120 W. Second St. Phone Michigan 1391	MILWAUKEE 2 312 E. Wisconsin Ave. Phone Dally 8-5359	PITTSBURGH 22 535 Smithfield Street Phone Grant 1-7100	DETROIT 2 Harry R. Brethen 15 Lawrence Ave. Phone Townsend 8-2577
*MINNEAPOLIS 3 H. A. Holden, Inc. 1208 Harmon Place Phone Geneva 5353	PEORIA W. C. Johnson 101 Helms Court Phone 2-7786	*Local Stocks Available			

Components Assembled Into Equipment As Single Blocks

An entirely new approach to equipment design has been opened to industry by Federal Telephone and Radio Corporation of Clifton, N. J. Federal offers a unique development in component sealing—the successful encapsulation of selenium rectifier stacks and allied components.



With this new method of protective sealing, it is now possible to assemble transformers, capacitors, resistors and other components—interconnected—into equipment as single blocks. As a result, entire assemblies as well as individual units can be replaced as easily as plugging in a vacuum tube. This avoids the necessity of time-consuming repairs.

The embedding of various components in this new protective material minimizes failures due to dust, dirt, condensation, acid vapors and caustics. It provides minimum resistance to moisture, water, salt spray and solvents. Because of the greater flexibility and compactness of design, components encased or sealed by the newly developed process can be used where conditions formerly made their application impossible. For example, in the circuit field a multiplicity of components may be encapsulated as a unit. Another application is use of encapsulated units as substitutes for oil immersed units.

1 1 1

Yale & Towne Manufacturing Line of Aluminum Fixtures

To meet an increasing demand for aluminum fixtures, the Yale and Towne Mfg. Company, Stamford, Conn., is now producing for the first time in its 85-year history a new full line of locks and builders' hardware fabricated of the versatile light-weight metal. The company made some special aluminum hard-

(Please turn to page 252)

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ASING



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Precision gage production
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A fine, long wearing finish must be achieved just
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Try CLEVELAND Slotted-Type "Place" Bolts*

to solve vibration-point fastener problems



Profit by the economy and one-piece simplicity of this remarkable self-locking fastener

● Find out about Place Bolts *now!* New users and new uses are multiplying daily. A cold-forged fastener made of either high carbon or alloy steel, the Place Bolt head brings *diaphragm spring action* to bear on seating surfaces while elastic elongation of the shank safeguards against loss of initial bolt-tension. Vibration-and-shock-proof holding power is assured. Sizes range from 1/4" diameter upwards, standard or special. Write today for our Place Bolt Folder.

*Licensed under U. S. Patent No. 2543705.

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originators of the Kaufman **DOUBLE EXTRUSION** Process
Ask your jobber for Cleveland Fasteners

(Continued from page 250)

were products even before World War I, production on which was suspended due to metal restrictions during World War II.

With the recent lifting of restrictions, the company is resuming fabrication from aluminum and for the first time in the history of the company will have a complete, standard line of aluminum locks and hardware for the full range of normal operations. The company's current production is geared to meet the forecast expansion of institutional building and refurbishing and the indication of a greatly increasing trend toward the use of aluminum hardware.

The Yale aluminum line will consist of high quality pin tumbler mortise locks in four designs together with a wide variety of designs of knobs, roses, thumb turn plates, cast and wrought push plates, cast and wrought pulls with plates, pull grips, flush bolts, door stops, letter hole trim, and sash fasteners. The aluminum locks and hardware will have brass bolts, screws and cylinder plugs, finished in dull chrome. Primarily the line has been designed for school installations but have their applications in other institutions.

1 1 1

New Phenolic Molding Compound May Replace Some Metals

A new high-impact, glass-fiber-filled, one-step phenolic molding compound, "Durez 16221 Natural," has been announced by Durez Plastics & Chemicals Inc., Walck Road, North Tonawanda, N. Y. It is designed for application where high shock resistance is required. Because of its mineral filler, it is claimed that it can be used at temperatures where cellulose-filled impact compounds would be unsatisfactory. It has excellent dimensional stability and a high modulus of elasticity, opening up new fields of application, which heretofore required the use of metals.

It is supplied in a dry, easy-to-handle form. It is readily molded by standard compression methods. Pressures of 5,000 to 6,000 psi are recommended. High frequency preheating permits the use of lower molding pressures. Molding temperatures of 300F to 350F are recommended, with the lower temperatures most desirable with parts with thick sections. Cure time is only slightly slower than for general-purpose materials. A breathing cycle, wherever possible, is advisable.



The world's most valuable piece of *REAL ESTATE!*

It was from this one soil sample . . . out of tens of thousands from all over the world . . . that a team of scientists in 1950 first isolated the mold growth that produces terramycin. Today, impressive quantities of terramycin produced from this original mold are bringing under control some eighty diseases, including certain serious virus infections.

A vast network of pipes and valves regulate the proportion and control the flow of the liquid media in which the antibiotic mold is grown. To safeguard the purity of this vital liquid from harmful contamination ALOYCO Stainless Steel Valves are used in the plant producing terramycin.

Most of the manufacturers of the new wonder drugs such as terramycin, penicillin, chloromycetin, streptomycin,

neomycin, as well as other leaders in the chemical industries, have come to use many different types of ALOYCO corrosion-resistant valves. Our long and extremely diversified experience in the field together with our pre-testing of alloys under actual line conditions enable us to supply valves of the proper alloy and best design for every corrosive service.

If corrosives play a part in your business, it will pay you to bring your problems of corrosion, contamination, discoloration, or temperature extremes to the *Aloyco Corrosion Engineering Service*. Here the world's largest specialists in corrosion-resistant valves will help you determine which valves best meet your requirements.

ALOYCO valves go hand-in-hand with chemical progress. 3.6



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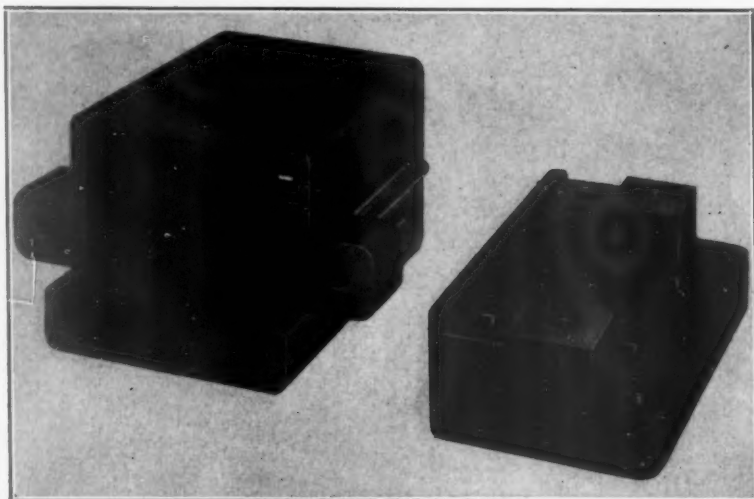
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Mayor Says New York City Purchasing Department Saves Millions Through Seminars

Mayor Impellitteri of New York City credits his Purchasing Department with saving some \$10,000,000 for the taxpayers of the world's largest city over the past five years. This has been made possible, according to the mayor through the "economic seminar" method of buying city supplies, instituted five years ago by the city's Purchase Commissioner, John Splain. "The procedure," the mayor said at a Municipal Building meeting of about 60 purchasing department buyers on the occasion of the fifth anniversary of the seminars, "is unique among municipal governments since it has not existed before in all the history of purchasing, private or public."

Under the seminar method, buyers and other employees of the Purchasing Department meet periodically to discuss market conditions, make estimates of the trend of prices for the next six months and formulate recommendations on purchasing generally. Buyers in the various fields of city purchasing exchange information in order that all may benefit from techniques and methods found effective. Many economies are effected by such discussions and the ideas coming out of such seminar meetings.

1 1 1

New Process Eliminates Waste In Nickel and Copper Dust

The world's largest nickel producer, the International Company of Canada Ltd., is engaged in a housekeeping operation at its huge smelter at Copper Cliff, Ont., that is saving thousands of dollars for the company annually. It recovers the dust from the gases of its batteries of roasters and converters in the smelter and turns it back into production instead of allowing it to escape into the air.

The dust, which is recovered at a daily rate of hundreds of tons, is a special variety containing small quantities of nickel and copper. On their way to the plant's 500-foot stack the gases from the smelter pass into huge flues in the treater section of a Cottrell precipitator. The dust collected on the electrodes of the precipitator is periodically rapped off and falls into bins, where it is picked up by a conveyor and transported to a shooting tank from where it is blown back to the reverberatory furnace and re-enters the smelting process.

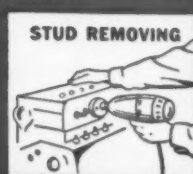
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Easy on operators because there's no kick—no twist—on toughest jobs!

I-R IMPACTTOOLS save "muscle power"—powerful rotary impacts do the work.

I-R IMPACTTOOLS speed up production—they have full power in either direction.

I-R IMPACTTOOLS cut operating costs—save up to 90% of nut running time.

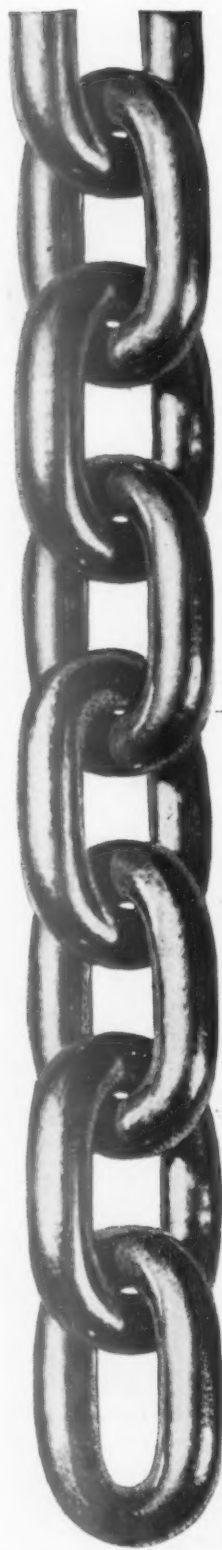
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Campbell makes chain to meet every requirement . . . to any desired specification. Each length is inspected link-by-link to guarantee dependable, long lasting service.

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Write for your copy of the new Campbell Chain Catalog. When you have an unusual problem involving chain, the Campbell representative in your area can help you.

Chain for every need . . . INDUSTRIAL
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Travelling Material Handling Clinics To Tour United States

Travelling material handling clinics to discuss local handling problems with chapter members of the American Material Handling Society in the principal cities will be conducted during 1953, according to a decision of the board of directors of The Material Handling Institute, Inc.

The clinics have been organized to promote a better understanding of correct application of material handling equipment.

Each of the several travelling groups will be headed by an MHI officer with qualified specialists in each type of material handling problem, selected from the membership of the Institute. The clinics will be scheduled to meet requests from AMHS chapters. In each city the specialists in the travelling panels will describe the proper use of material handling. Then, AMHS members and other users of material handling equipment present at the meetings will outline specific problems from the floor to be analyzed by the panel of MHI specialists.

The travelling units will begin in the early spring and continue throughout the year.

1 1 1

Small Business Pools Explained In New Government Booklet

A booklet has been issued by the Small Defense Plants Administration explaining how small firms may voluntarily band together into production pools to improve their chances of obtaining Government defense contracts. The booklet, *Small Business Production Pools for Defense*, says that because his facilities are limited the small manufacturer is frequently at a serious disadvantage in competing for defense contracts.

The solution, according to the booklet, is to form small business production pools. These are voluntary associations in which small manufacturers pool their facilities, finances and skills to obtain and carry out defense contracts which no one of them could alone perform. Basic information is given about small business production pools and the laws affecting their operation are explained in detail as well as the necessary procedure for obtaining Government approval of a pool. The booklet can be had free from Small Defense Plants Administration, Washington 25, D. C.

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 IN YOUR SMALL ENGINES?**

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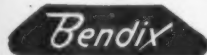
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Whether you purchase a small engine for outboard, industrial or marine use, today's foremost consideration should be long life and trouble-free performance. Therefore, it will pay you well to insist on Bendix magnetos in the engine you select. For the basic design of Bendix magnetos assures quality performance for *every type* of small engine and *every pricing requirement*. Remember it pays to specify Bendix, the most trusted name in magnetos. Complete information available on request.



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OPEN HOUSE FOR VENDORS: Good customer-vendor relations don't always move in one direction. Over a hundred major sub-contractors were guests recently at an open house at Menasco Manufacturing Company, Burbank, Calif., designers, testers and manufacturers of aircraft landing gears. The company's Procurement Division played host, with the following handling arrangements: Robert N. Huntoon, Director of Procurement; Thomas E. Merrick, Purchasing Agent; Dan Burns, Supervisor of Outside Production; Fred Nelson, Traffic Manager; and Carl Marshall, Supervisor of Material Control. Many of the guests are shown here at luncheon.

RCA Sets Up New Service For Industrial Tube Users

The Tube Department of the RCA Victor Division, Radio Corporation of America, has announced a new service designed to simplify the electron tube procurement and inventory problems of industrial tube users and others. Based on a continuous, personalized analysis of each customer's long range requirements of power and receiving tubes, the service is expected to result in more efficient operation of electronic equipment and in reduction of overhead costs.

The service will be administered by RCA industrial tube distributors. The Tube Requirement Analysis Program will provide industrial tube users with basic information regarding their particular tube requirements. This information can help customers reduce overhead and operating costs because it will indicate the proper reserve inventory for key tube types, expose overstocks of infrequently used tubes, and systematize the placement of renewal orders far enough in advance to assure uninterrupted operation of equipment.

Under the mechanics of the program, RCA distributors will establish a running analysis of each participating customer's electronic equipment and tube requirements. The analysis will chart yearly tube consumption by type, record changes in the number of sockets, and assure the adequacy of the customer's reserve inventory. The service places

at the disposal of the industrial tube user the distributor's "field tested" experience with inventory control and his knowledge of tube performance and consumption.

STEEL CASTINGS

For Industrial ... Commercial and Transportation use

Including castings for machine tools, gears, hydraulic machinery, power transmission equipment, compressors, construction machinery ... to mention only a few.

Since 1915, users of Atlantic castings and services have found them to be of the highest quality. This service includes the cooperative efforts of Atlantic engineers, plant supervisors and workers. Their know-how, and their many skills are properly coordinated to produce only top-grade steel castings.

The next time you require good, sound and accurate castings ... call Atlantic.

ATLANTIC "AXIOMS"

Write for our interesting free little magazine edited for users of steel castings.





UNOBA grease keeps rubber ribbons rolling

In this leading rubber plant UNOBA grease lubricates 60-inch ribbon mills under severe conditions of heat and pressure. As these mills roll hot rubber into unending ribbons, there can be no chance of costly breakdowns. That's why reliable lubrication with UNOBA grease is specified.

Multi-purpose UNOBA is a *barium* base grease. This makes UNOBA ideal for many unusual operating conditions because it is able to resist *both* heat and water. UNOBA sticks to metal surfaces at temperatures ranging from below freezing to over 300 degrees F., *regardless of moisture!*

Because of its versatility, UNOBA can be used in practically *all* your grease-cup and gun fittings. In some factories, this one grease has replaced as many as seven specialized lubricants. UNOBA will protect against rust, prevent excessive wear and prolong the life of machinery parts.

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HUGE STOCKS**

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a call!**



Do you have production, purchasing, stocking or delivery problems on threaded fasteners? Pheoll... the COMPLETE source... has all the answers! And here they are:

STOCKS? Pheoll has 'em... largest in the industry... kept up to level by perpetual inventory controls!

TYPES AND SIZES? Pheoll has 'em... the industry's *most complete line*... by types, head styles, finishes and sizes!

LARGE ORDERS? Pheoll can generally ship *immediately* on most standard types and sizes!

STOCK INFORMATION? Always available for immediate reply to phone calls, telegrams or letters!

QUALITY? Tops for 50 years... kept that way by constant production line and laboratory inspection!

FAST SHIPMENT? Yes! Efficient mechanized order-handling procedures minimize errors and hustle orders along to fast, sure completion!

In every way, *you get better service at Pheoll!* That means less work for you... fewer orders, reduced paper work, less follow-up, simplified stocking. Test Pheoll on your next threaded fastener requirement and see how headaches vanish!

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Ladder Rods

Semi-Wood Screws
Thumb Screws
Stove Bolts
Carriage Bolts
Lag Bolts
Machine Bolts
Broom Washers

Machine Screw Nuts
Stove Bolt Nuts
Slotted Nuts
Castellated Nuts
Wing Nuts
Cap Nuts
and other fasteners

Norton Company Studying Use Of Electrolysis In Diamond Wheel Grinding Process

The sharpening of single-point carbide tools, according to Government records, is the largest single consumer of diamond bort. As a possible means of conserving this diamond bort, the Research and Development Department of the Norton Company, Worcester, Mass., has been engaged for several months in evaluating electrolytically-assisted diamond wheel grinding of cemented carbide—a process sometimes referred to as “electrolytic grinding.” It is a method of stock removal wherein conventional diamond wheel grinding is assisted by simultaneous electrolysis (an electrochemical erosion or decomposition) of the cemented carbide.

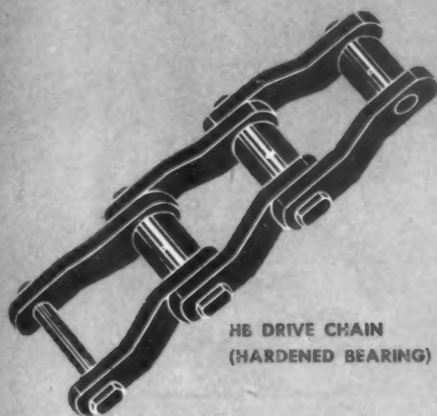
From its research the company concluded that diamond wheel grinding assisted by electrolysis is “promising” as a commercial method for sharpening single-point carbide tools. The company believes that commercially accepted rates of cut can be maintained with their grade N metal bonded wheels, operated with electrolytic assistance on the order of 125 amp/sq in. with a diamond consumption that is only a fraction of that required for the same operation using their vitrified bonded diamond wheel in conventional grinding.

However, there is evidence of some attack on adjacent edges by electrochemical erosion during electrolytically-assisted diamond wheel grinding. Because of this and other considerations, the company does not feel, until other aspects of electrolytically-assisted diamond wheel grinding have been investigated more thoroughly, that it can unqualifiedly recommend the method for the commercial sharpening of single point carbide tools.

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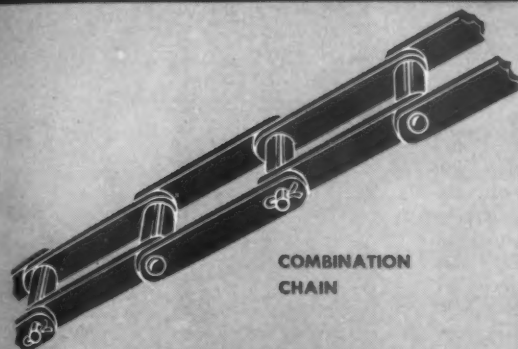
Canadian Trade Fair Opening June 1 To Be Largest Ever

When the Canadian International Trade Fair opens on June 1st, it will be by far the largest since its inception in 1948 and will contain a greater variety of products than ever before. Already more than 230,000 square feet of exhibit space has been booked, against a previous record of 195,000 square feet. Twenty countries are represented. Products to be shown cover an extremely wide range in sections devoted both to consumer goods and capital equipment.

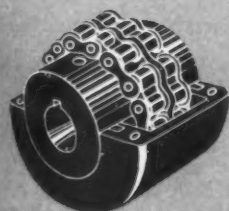


HE DRIVE CHAIN
(HARDENED BEARING)

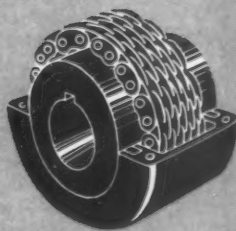
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It doesn't matter to us which power transmission or materials handling chain is best for your job but it does to you. For almost invariably there is one chain which will perform best and last longer on a given application. And that's the chain we'll recommend. We'll recommend it because we make it.

The thing to remember about UNION is that UNION makes every type of steel chain and attachment for the transmission of power and the mechanical handling of materials. (And nothing else, incidentally. We're complete chain specialists.) So you might well wish to put your next chain assignment in our hands. If you do, you'll get prompt attention from a UNION representative (see list below) or from the home office. The Union Chain and Manufacturing Company, Sandusky, Ohio.

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Phone: Underhill 3-5810

GEORGIA

H. F. Edge
Walton Bldg.
Atlanta, Ga.
Phone: Alpine 3241

ILLINOIS

Union Chain & Mfg. Co.
A. C. Mohr, William R. Albrecht
Bradley N. Nelson
53 W. Jackson Blvd., Rm. 1232
Chicago 4, Illinois
Phone: Wabash 2-3886

INDIANA

Paul W. Huddleston
5745 Guilford Ave.
Indianapolis 28, Ind.
Phone: Broadway 1341

KENTUCKY

Fred W. Borow
1218 Summit Drive
Lexington, Kentucky
Phone: 43820

LOUISIANA

F. N. Johnston Co., Inc.
236 Humble Oil Bldg.
New Orleans 15, La.
Phone: Audubon 1364

MASSACHUSETTS

Transmission Engineering Co.
Stan Johnson
6 Hartford St.
Newton Highlands 61, Mass.
Phone: LaSalle 7-2822

MICHIGAN

Union Chain & Mfg. Co.
W. J. White
Basso Bldg.
Detroit 2, Michigan
Phone: Trinity 3-8825

MINNESOTA

F. H. Bathke Co.
490 N. Snelling Ave., Rm. 671
St. Paul 4, Minnesota
Phone: Nestor 6575
Nestor 2721

MISSOURI

James B. Flaherty
181 South Meramec
St. Louis 5, Missouri
Phone: Delmar 2923
Delmar 2924

Ed. Schiefelbein
311 West Tenth St.
Kansas City 6, Missouri
Phone: Jefferson 3332

NEW YORK

J. B. Foley
187 Tully St.
Syracuse 4, New York
Phone: 4-8587

Mays & Gleason, Inc.
58 Church St.
New York 7, N. Y.
Phone: Worth 4-2253

Petter & Dugan Inc.
28 Wilkeson St.
Buffalo, New York
Phone: Cleveland 1474

NORTH CAROLINA

M. R. Snyder Co.
384 E. Tremont Ave.
Charlotte 3, North Carolina
Phone: 4-7190

OHIO

Union Chain & Mfg. Co.
F. H. Dalrymple & Frank Smiley
Marshall Bldg.
1211 Public Square
Cleveland 13, Ohio
Phone: Main 1-4925

OREGON

J. W. Minder Chain & Gear Co.
387 S.E. Hawthorne Blvd.
Portland 14, Oregon
Phone: Empire 1131

PENNSYLVANIA

David Davies
P.O. Box 4
Plymouth, Pennsylvania
Phone: 9-1103

Wayne G. Ritter
Ritter Engineering Co.
3831 West Liberty Ave.
Pittsburgh 16, Pa.
Phone: Locust 1-1363

The Union Chain & Mfg. Co.
John A. Shoemaker
32 Rittenhouse Place
Ardmore, Pennsylvania
Phone: Midway 2-8886

TEXAS

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J. H. Castleberry & Claude Hall
1334 Fidelity Union Life Bldg.
Dallas 1, Texas
Phone: Randolph 4828

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C. Arthur Weaver
483 E. Franklin St.
Richmond 19, Virginia
Phone: 2-6648

WISCONSIN

Union Chain & Mfg. Co.
Brad Nelson
Wisconsin Tower Bldg., Rm. 504
606 W. Wisconsin Ave.
Milwaukee 2, Wisconsin
Phone: Broadway 2-4350

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E. F. Gahan
508 Fifth Ave.
New York, New York

OREGON

Union Chain & Mfg. Co.
W. D. Hollingworth
Room 408, Concord Bldg.
200 S.W. Stark St.
Portland 4, Oregon
Phone: Alwater 9211

Personalities



IN THE NEWS

George W. Urban has been appointed Purchasing Agent of The Cleveland Crane & Engineering Company, Wickliffe, Ohio, succeeding Henry



George W. Urban

Karr, who has retired after more than 50 years of service with the company. Mr. Urban was Assistant Purchasing Agent for the past seven years and prior to that was connected with Pesco Products Company, as a buyer.

John Allan Pond has been appointed Director of Purchasing at the University of Colorado, at Boulder, Colo. Mr. Pond, formerly Purchasing Director for New York University's Bellevue Medical Center, assumes his new duties April 1. He will be in charge of purchasing for all divisions of the university, and his office will be located on the Boulder campus. He will coordinate the work of the present purchasing agents on both campuses, Leslie F. Robbins in Boulder, and Irving Johnsen at the Denver Medical Center.

Mr. Pond went to New York University in 1950 and was in charge of the division of purchase which served the hospitals, colleges of medicine, research institutes and administrative units of the medical center.

Before that Mr. Pond was procurement chief and later Assistant Purchasing Agent at the University of Chicago.

He is a graduate of Northeastern University in Boston, Mass., where he earned his Bachelor of Business Administration in Management, and of the University of Chicago, where he earned his Master of Business Administration.

Mr. Pond is treasurer of the National Association of Educational Buyers and a member of the National Association of Purchasing Agents.

William F. Langefeld has been appointed Director of Purchases for The Maytag Company, Newton, Iowa. He formerly was Director of Purchases with Material Service Corporation, Chicago, Ill. In his new position, Mr. Langefeld fills the vacancy created when C. W. Clauser was appointed personal assistant to the vice president in charge of manufacturing for Maytag.



William F. Langefeld

A native of Chicago, Mr. Langefeld attended schools in and around Chicago and took extension and evening courses at the University of Illinois, University of Wisconsin and Illinois Institute. He is married and has two children.

Mr. Langefeld has also held positions in purchasing, engineering and production with Manning, Maxwell and Moore, Muskegon, Mich.; Aviation Controls Division, Eversharp, Inc., Chicago; U.S. Gypsum Company, Chicago and Western Electric Company, Chicago.

William J. Reynolds has been appointed Director of Purchasing for Johns-Manville Corporation, New York City. Mr. Reynolds, who was formerly



William J. Reynolds

Purchasing Agent for the company, succeeds S. F. Curtis, who has retired.

Born in Bedford Hills, N.Y., Mr. Reynolds joined Johns-Manville in 1913 at the company's office in New York City and in 1916 was transferred to the Purchasing Department. In the past 36 years he has been successively Buyer, Senior Buyer, Chief Buyer, and in February, 1946, was appointed Purchasing Agent.

Mr. Reynolds is a past treasurer and past president of the Board of Trustees of the Salem Baptist Church, New Rochelle, N.Y. He is a member of the National Association of Purchasing Agents, a former president of the New York Chapter of the Johns-Manville Quarter Century Club, and a veteran of World War I. He is married and has a married daughter, who now resides in Dallas, Texas.

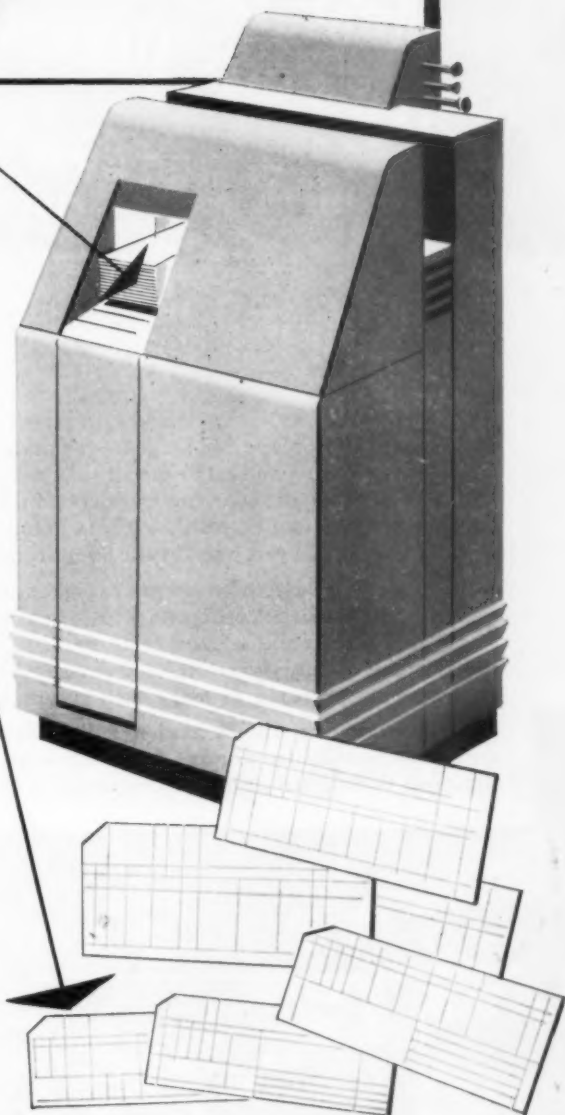
P. D. Shollar, Assistant Manager of the Procurement Department since 1937, succeeds Mr. King as Manager. He is a native of Williamsburg, Pa., and was graduated in 1920 from Pennsylvania State College with a Bachelor of Science degree.

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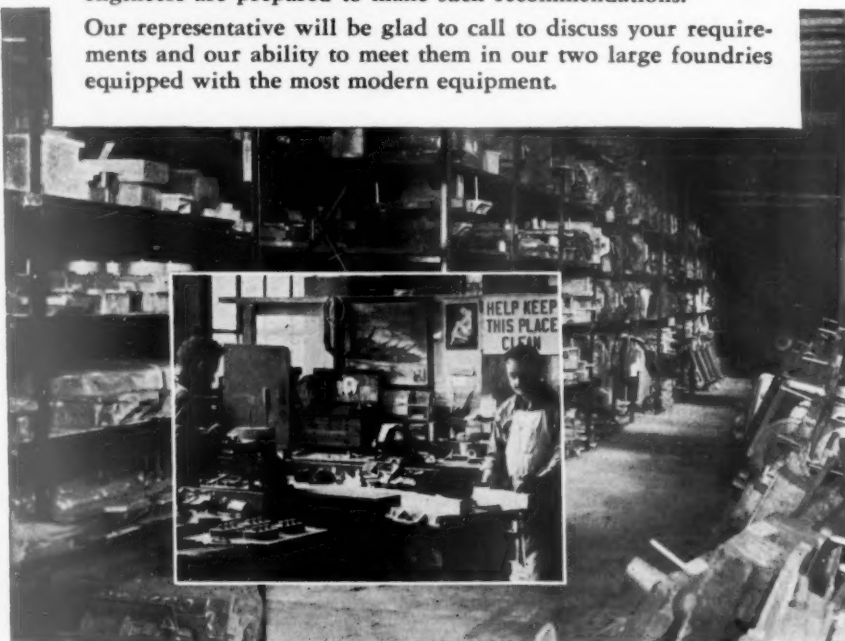
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Leon P. Miller, vice president in charge of Purchasing for Enterprise Manufacturing Company, Akron, Ohio, has been elected to the position of vice president and factory manager. Mr. Miller joined the company 33 years ago and served successively as Purchasing Agent, Director of Purchases, Vice president in charge of Purchasing, and last year was elected a member of the board of directors.



Leon P. Miller



Wayne E. Miller

He graduated from Wadsworth High School. He formerly managed the Firestone Tire & Rubber Company statistical department and served in World War I. He helped organize the Purchasing Agents Association of Akron and the Purchasing and Storing education course at the University of Akron.

Mr. Miller is a Mason, Shriner, Past Monarch Yusef Khan Grotto, and a member of the American Legion and the Trinity Lutheran Church. He is married and has one son and three grandchildren.

Wayne E. Miller has been named Director of Purchases of Enterprise, succeeding Leon P. Miller. The new post includes the responsibilities of Purchasing Agent, the position Wayne Miller held up to this time. He joined Pflueger's in 1938 as shipping clerk and in 1939 was transferred to the Purchasing Department.

Wayne Miller was graduated from Buchtel High School and attended Akron University. During World War II he spent two of his three years in the army overseas in the European Theatre.

He is a member of the Akron Purchasing Agents Association, American Legion, Trinity Lutheran Church, a Mason and member of Yusef Khan Grotto. He is married and has three children.

Charles C. Nolan has been appointed Purchasing Agent of the National Pneumatic Company, Inc., and Holtzer Cabot Division, Boston, Mass. Norman T. Ross has been appointed chief buyer.

John J. Fox has been appointed Purchasing Agent of the Nazareth Cement Company, Nazareth, Pa., replacing Ray H. Brodt, who has entered the selling field as a member of the staff of the Universal Paper Bag Company, New Hope, Pa. Mr. Brodt has resigned as National Director of the Purchasing Agents Association of the Lehigh Valley.

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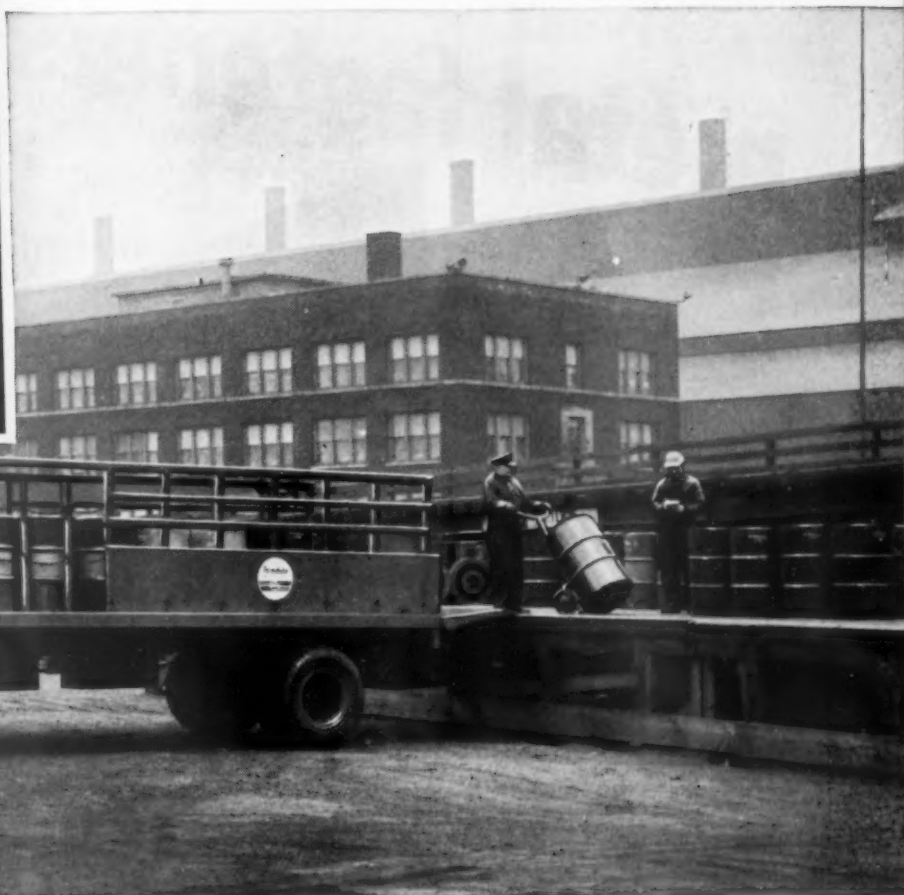
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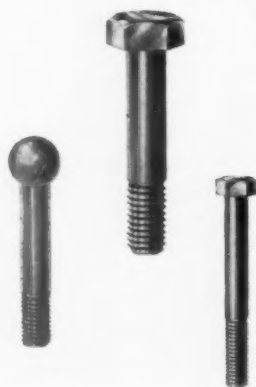
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958-CH



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H. C. Bear has been appointed Director of Purchases of United States Gypsum Company, Chicago, Ill., succeeding F. L. Stellner, recently promoted to secretary and treasurer of the company. Mr. Bear, formerly merchandise manager of dealer sales, takes over the same position held 48 years ago at United States Gypsum by his father, Robert G. Bear, who died in 1933.



H. C. Bear

For eight years following his graduation from the University of Illinois in 1928, Mr. Bear was employed by the B. F. Goodrich Rubber Company. He joined United States Gypsum in 1936, becoming sales manager of plaster and lime products in 1943, merchandise manager of the plastering materials division in 1946, and merchandise manager of dealer sales in May, 1952.

David M. Nason has been appointed Assistant Material Manager at Piasecki Helicopter Corporation, Morton, Pa. He formerly was Purchasing Agent of the New Holland Machine Division of the Sperry Corporation. As assistant to John N. Eustis, Materiel Manager, Mr. Nason will direct the overall administrative and control functions of the Material Department.

Prior to his association with New Holland, Mr. Nason was with Westinghouse as Purchasing Agent in the Radio Division in Baltimore, Md., and with several other plants including the Aviation Gas Turbine Division in Philadelphia, Pa.

He is a graduate of Massachusetts State College, with a B.S. in mathematics and physics. In addition, he took two years of special work at Massachusetts Institute of Technology in engineering administration. Mr. Nason is married and makes his home in Charlestown, Pa.

Harold Hosier, western region Purchasing Agent of the Charles Bruning Company, Inc., Teterboro, N.J., has been named the company's Purchasing Director. His office will remain at the Bruning Company's offices in Chicago, Ill.

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SEE PAGE 164

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P-453

Royce D. King has retired as Manager of the Procurement Department, Koppers Company, Inc., Pittsburgh, Pa., after 24 years in that position. Charged with responsibility for buying raw materials and equipment for Koppers' 55 plants and its offices, Mr. King directed



Royce D. King

buying of many thousands of different items last year from more than 11,000 different suppliers in the United States and Canada. His job has long been recognized as one of the toughest of its kind.

A native of Stockertown, Pa., Mr. King attended Lehigh University studying civil engineering. He joined Koppers in 1920 and was made a buyer in 1921 and Purchasing Agent in 1928. After reorganization of the company in 1946 he became Manager of the Procurement Department. Last May he was appointed to a vice presidency.

John Smith has been named Purchasing Representative in charge of the new West Coast follow-up office opened by the material department of Temco Aircraft Corporation, Dallas, Texas, in the Outpost Building, 6715 Hollywood Boulevard, Hollywood, Calif. Mr. Smith formerly was an outside vendor contact man. Representatives operating from the new office will be assigned to checking on vendors who are fabricating items for Temco, and to expediting any critical shortages which may develop on the West Coast.

Paul G. Dowen has been appointed Purchasing Agent of the Pioneer Steel Ball Company of Unionville, Conn. Mr. Dowen attended William H. Hall High School in West Hartford, Conn., and Norwich University at Northfield, Vt. A veteran of World War II, he formerly was employed by the Phoenix Fire Insurance Company.

Charles Goodman has been appointed Purchasing Agent of Earle Gear & Machine Company, Philadelphia, Pa.

Emile H. Daigle recently was sworn in as Purchasing Agent for the City of Lowell, Mass.

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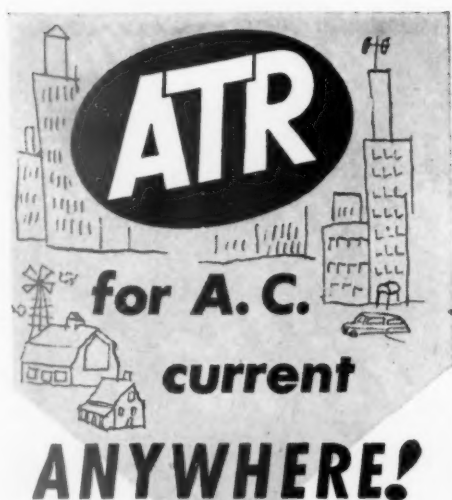
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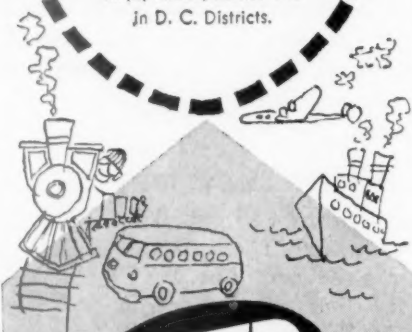
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Richard S. Reade has been appointed Director of Purchases of American Radiator & Standard Sanitary Corporation, Pittsburgh, Pa. He formerly was in charge of purchasing for American Blower Corporation, Detroit, Mich., a subsidiary of American-Standard. His new headquarters will be in the firm's Pittsburgh general offices.



Richard S. Reade

Mr. Reade joined American Blower in 1934, following his graduation from the University of Michigan with a degree in mechanical engineering. He was engaged in sales work until 1942, when he became special mechanical design engineer. In 1944 he was named manager of the company's fan and blower division, and served in that position until his assignment as Director of Purchases in 1948. He is a member of the Purchasing Agents Association of Detroit and the Engineers Society of Detroit.

W. Orville Wilson has been named Purchasing Agent of the Atkins Saw Division of the Borg-Warner Corporation, Indianapolis, Ind., succeeding W. N. Springer, who retired recently after 40 years' service with the company. Mr. Wilson, who had been Mr. Springer's assistant since 1946, has been with Atkins for the last 17 years and has worked in the Purchasing Department since 1940. Prior to that time he was connected with the repair, shipping and receiving departments.

Born in Mountain City, Tenn., Mr. Wilson went to Indianapolis 25 years ago from Oaktown, Ind. He attended Indiana and Butler Universities before taking special training in the field of aviation.

Mr. Shollar's first position after graduation was with the West Penn Power Company in Pittsburgh and he later joined Carnegie-Illinois Steel Corporation as a cadet. While in school he had worked during the summer months as a tracer in Koppers engineering department and he returned to Koppers in 1923, going to work in the Purchasing Department. He became assistant manager of that department in 1937.

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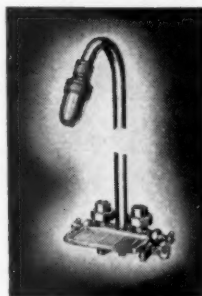
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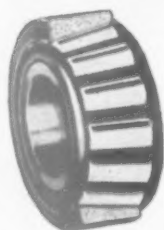
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When you buy bearings from an AFBDA member, you can be certain they are "factory fresh"—have been properly handled and are free from defects. They are backed by our "Bearing Specialist" member and the manufacturer. The AFBDA member in your area can meet with speed and knowledge your most urgent bearing emergency through the skilled technicians and complete stocks he always has available for your service.

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Learn new maintenance practices, better ways to make bearings last longer. Second year of publication! WRITE TODAY!

THE ANTI-FRICTION BEARING DISTRIBUTORS ASSOCIATION

1900 EUCLID AVENUE • CLEVELAND 15, OHIO

Edgar C. Nelson, former Secretary of State of Missouri, has been appointed state Purchasing Agent by Governor Phil M. Donnelly. Mr. Nelson succeeds Leo J. Clavin as head of the State Procurement Division.

Mr. Nelson formerly was a newspaper owner and publisher. At various times he owned or had interest in newspapers at Bunceton, Boonville, Lebanon, Marshall and Brookfield.

Leo Neumann has been appointed Purchasing Agent of Globe Lighting Products, Inc., West Coast Division, Los Angeles, Calif. Mr. Neumann is well known in the fluorescent and incandescent lighting fields, and formerly was associated with several manufacturers in the Chicago, Ill., area.

Richard M. Hoover has been assigned to the Purchasing Department of Monsanto Chemical Company's Organic Chemicals Division, St. Louis, Mo. He has been with Monsanto since 1947 and was a member of Monsanto's central purchasing department. He formerly was assistant supervisor in the company's John F. Queeny plant.

A native of Little River, Kan., Mr. Hoover is a graduate of the University of Kansas, where he received a B.S. degree in chemical engineering in 1945, and an M.S. degree in 1948.

John H. Kern has been appointed Purchasing Agent for Horace T. Potts Company, Philadelphia, Pa., succeeding Thomas I. Potts, retired. Mr. Kern who has been with the company 25 years, formerly was a salesman and manager of office sales. He recently was made a junior partner.

Alfred F. Skok has been appointed assistant secretary and Purchasing Agent of The Parker-Street Casings Company, Cleveland, Ohio. Mr. Skok began work with Parker-Street in 1941. He retains his position as office manager to which he was named in 1950.

E. E. Middleton has been named Purchasing Agent of Parke, Davis & Company, Detroit, Mich., succeeding Stewart N. Jones, who retired March 1 after more than 40 years with the pharmaceutical firm.

A native of Chicago, Mr. Middleton was graduated from the University of Illinois in 1921. He held various supervisory and executive positions with companies in Illinois and Ohio for the next nine years. In 1933 he joined Parke-Davis in the pill and tablet department and nine months later was advanced to the time study division—a position he held for two years before being transferred to the Purchasing Department.

He began as a clerk for the department in 1935 and rose through the ranks to become successively Assistant Buyer, Buyer and Assistant Purchasing Agent.



"R B & W took us off a *hot spot*
by cold-forging this key fitting"

● "You know how important that little fitting is, Joe," continued Mr. Tobin. "It connects the oil line to this filter we* make, and it was this component that gave us one headache after another."

"How did you clear up the trouble?" Joe asked, as he peered at the oil filter he had seen on so many cars.

"Well, these spuds, as they are called, used to be machined from bar stock. If there were checks or seams in the bar, the machining process failed to detect them. Realizing that spot checking would not eliminate our difficulty, we were forced to magnetically inspect every single spud. This magnetic inspection threw production costs out of line on such a small item. It also showed us that a sizeable part of our production had to be rejected, thus indicating that a change of the production method was necessary.

"Then one of our men thought of RB&W and it wasn't long before their engineers came up with the idea of cold-forging this fitting. Cold-forging made the spud stronger and eliminated the danger of cracking and leaking. It also made the fitting easier to weld to the filter. As a bonus, they even did away with one of the machining operations by forging a countersink at the same time they forged

the fitting. Now we're getting better spuds at lower cost in less time — and we no longer need the magnetic inspection."

Maybe this sounds like a special case to you, but it puts in sharp focus RB&W's down-to-earth engineering skill, as well as our practical experience in designing and fabricating the kind of fasteners that can solve your assembly problems.

Most of your fastener requirements can be met with standard products from our stock. However, if the unusual is called for, we'll design and make it for you—as efficiently and quickly as we turned out a better spud for this filter manufacturer.

Remember—for any fastening job, it's a smart move to call in RB&W. You can count on RB&W bolts, nuts, screws, and rivets for uniform accuracy, dependability and physical properties. And you can also count on fast service from RB&W's strategically located plants at: Port Chester, N. Y., Coraopolis, Pa., Rock Falls, Ill., Los Angeles, Calif. Additional sales offices at: Philadelphia, Pittsburgh, Detroit, Chicago, Dallas, San Francisco. Sales agents at: Portland, Seattle. Distributors from coast to coast.

**RUSSELL, BURDSALL & WARD
BOLT AND NUT COMPANY**

*Fram Corporation,
East Providence, R. I.

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Paper bags for food products, rock products, fertilizer, chemicals, etc. Valve or open-mouth type with pasted or sewed bottoms.



WATERPROOF DRUMHEADS

Made of durable, waterproof Chase burlap Protex, (burlap laminated with asphalt to heavy crinkled paper). Keeps drum and heads completely dry. No leakage because there are NO SEAMS. Draw cord permits cover to be removed and reused.

all of these products



POLYTEX LINERS

Made from polyethylene. Ideal inner protection for powdered milk, anhydrous and hygroscopic products. Odorless, moisture-proof, bacteria and mold resistant.



POLYTEX TURKEY BAG

This fine polyethylene packaging material fits your turkeys like a glove! Choice of lengths and widths and beautifully printed. Non-toxic and airtight! For poultry or meats. Write us today.

for industry



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Good-quality, uniform, and dependable twines. Chase Hi-Speed Sewing Machine Thread, Dixie Cotton Sail Twine and Hindoo Jute Twine.



SLIP-ON BARREL COVERS

They're RIGHT on the barrel head! Made of tough Neoprene-treated crinkled kraft. Slip on all sizes of barrels and drums—easily and quickly. Elastic skirt keeps out dirt! Choice of printed or plain.

and agriculture



REDI-RAPT TUBING

Chase two-way stretch burlap spiral tubing easily wraps any product that is hard to wrap. Bias sewn tubing is uniform in width, circumference and stretch.



CHASE CRINKLED LINERS

For bags, barrels, boxes, and drums. Available in 2 types: 1. crinkled for one-way stretch, 2. crinkled and pleated for stretch in all directions. Waxed or unwaxed. We will send you samples. Write today.



CHASE BAG COMPANY

GENERAL SALES OFFICES: 309 W. JACKSON BLVD., CHICAGO 6, ILL.
30 BRANCHES AND SALES OFFICES STRATEGICALLY LOCATED



Walter E. Peters has been named Director of Purchases by the Lakeside Bridge & Steel Company, Milwaukee, Wis. He had previously been Purchasing Agent of the company for 29 years and has been with the company for a total of 37 years. Edmund A. Koepke has been named Purchasing Agent. He has been with the firm 28 years.

Ralph A. Hull, Purchasing Agent of the Schutter Candy Company, Chicago, Ill., has been named special representative of the company, and will spend most of his time in the field with Schutter salesmen and brokers. Mr. Hull began work with Schutter in 1931 in the sales department and eventually was named assistant to the sales manager. During 1944 and 1945 on loan from Schutter he served in Washington, D.C., as candy specialist with the Office of Price Administration. Returning to Chicago in 1945, he was appointed Purchasing Agent.

Henry B. Stamm has been elected Vice President in charge of Purchasing for Columbia Mills, Inc., New York City.

Forrest L. Abbott, Purchasing Agent and Superintendent of Operations at Teachers College, Columbia University, New York City, has been named comptroller and business manager of Barnard College. In this newly created post, Mr. Abbott will coordinate the business management of the college. This will include the residence halls operation and management, the food service, the bursar's office, purchasing and office service, and buildings and grounds.

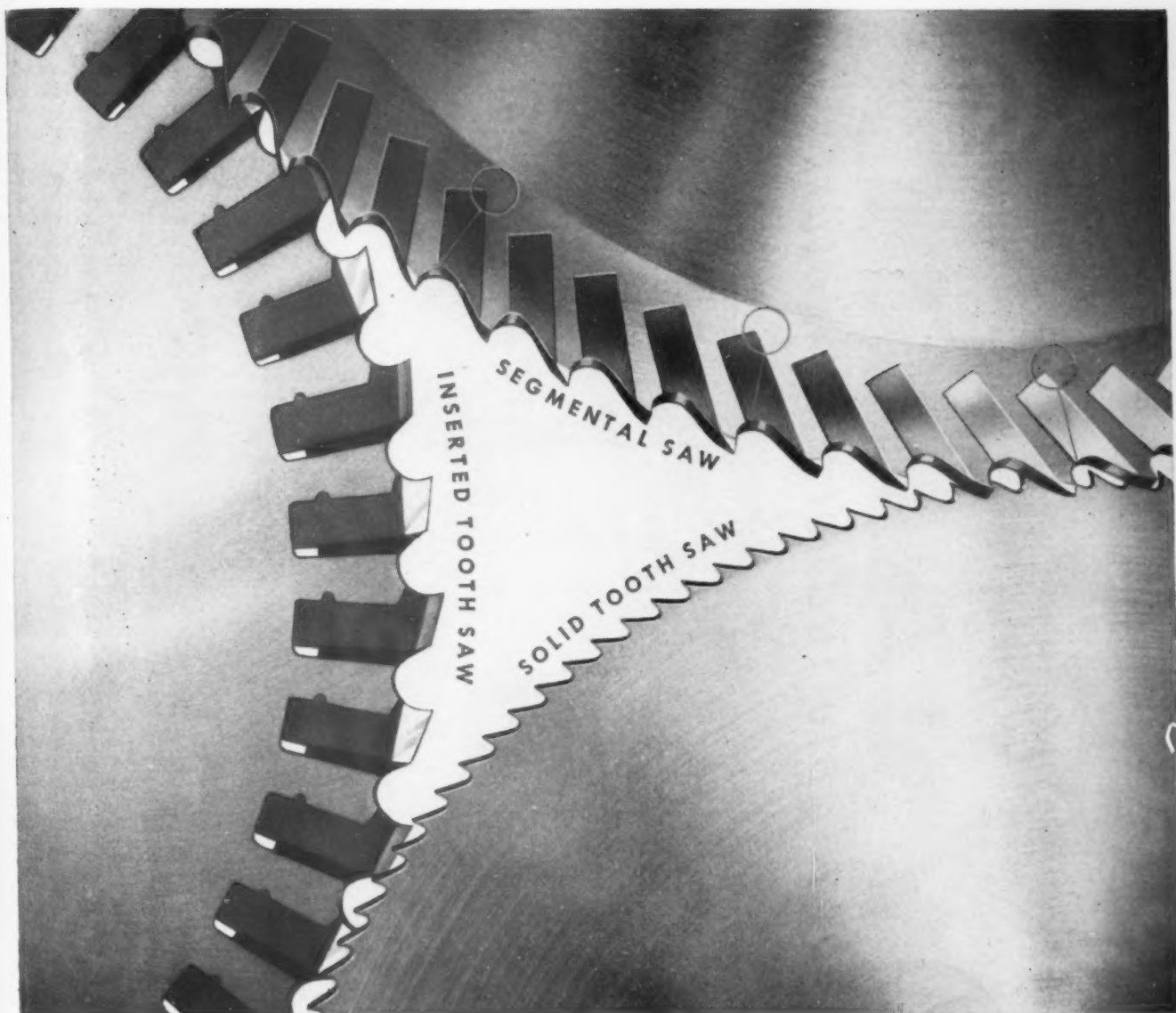
Mr. Abbott is first vice president of the National Association of Educational Buyers and from 1948 to 1951 was chairman of the association's committee on education. He is a member of the editorial board of the College and University Business Magazine.

Henry B. Stamm has been named Vice President in charge of Purchasing for Hupp Corporation, Cleveland, Ohio.

Leonard W. Erickson has been appointed Purchasing Agent of the University of Chicago, succeeding David F. Watson who has retired after holding the position since 1938. Mr. Erickson formerly was Assistant Purchasing Agent.

E. S. Woodard has been appointed Purchasing Agent of the Atlantic branch of National Lead Company, New York City, succeeding J. W. Beresford, who has retired because of ill health.

R. W. Roberts, Purchasing Agent for the state of Oregon since last July, has resigned his post. He previously had been Purchasing Agent for the First National Bank of Portland for 15 years.



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**For the best saw-performance on your job...
SIMONDS gives you a choice of All 3 Types!**

INSERTED TOOTH: For heavy production cutting of all steel, brass, copper, and aluminum. Alternating square and beveled teeth "tri-vide" chips for easy cutting and clearance. Teeth can be easily replaced, singly or in complete sets, in your own plant by any average mechanic.

SOLID TOOTH: For general shop cut-off jobs . . . for use on smaller automatic cut-off machines and for cutting jobs where narrow kerf is important.

SEGMENTAL: For especially smooth cuts on production work. High Speed steel toothed segments are securely held in a tough alloy plate by a special tongue and groove design, have quick clearance for faster, freer cutting.

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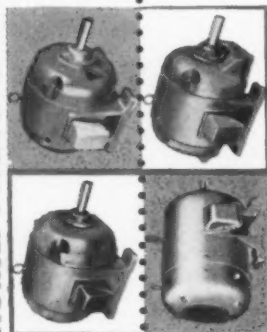


Factory Branches in Boston, Chicago, San Francisco and Portland, Oregon. Canadian Factory in Montreal, Que.
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One-piece
cast iron
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Extra large
"free-flow" air
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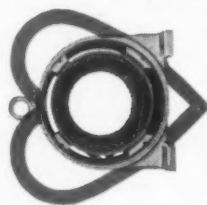
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ELECTRO DYNAMIC
DIVISION OF GENERAL DYNAMICS CORPORATION
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HEART of the motor

3. Extra high-frequency testing of insulation between turns.
4. Extra care in fitting coils into stator.



The WINDING is the

1. Extra insulation in stator slots and between phases.
2. Extra impregnations and bakings of the wound stator.

QUALITY SINCE 1880

WRITE TODAY FOR NEW ILLUSTRATED CATALOGUE NO. 463

Robert E. Venner, Manager of the Purchasing Department of International Business Machines, Endicott, N. Y., has been named chairman of the 1953 Broome County Red Cross campaign. Mr. Venner also is active in the Endicott Community Chest, Red Cross, Boy Scouts and other community projects. He is a member of the Endicott Kiwanis Club and the American Legion.

He is a director of the local chapter of the National Office Managers Association.

Bradford A. Goodenough has been appointed Purchasing Agent of Seth Thomas Clocks, Thomaston, Conn., following a reorganization of the manufacturing department. Under the reorganization, Mr. Goodenough's responsibilities extend beyond the Purchasing Department. He will be assisted in the administration of the purchasing activities by Bernard W. Smith, former plant Purchasing Agent. Mr. Goodenough formerly was the assistant to the works manager.

Philip C. King has been appointed Purchasing Agent of Metals Disintegrating Company, Elizabeth, N.J. He formerly was with General Aniline Works, Inc. as Purchasing Agent for engineering. Prior to that he held the post of Purchasing Agent of the Condenser Service & Engineering Company, Hoboken, N.J. At one time, Mr. King was active in his own business, operating as the Steel Trading Corporation, in Pittsburgh, Pa. Prior to that, for a number of years, he was Purchasing Agent for the Vanadium Corporation of America.

D. L. Peitzke, general supervisor, is responsible for the following procurement sections of Department 53: equipment, fabricated parts, non-productive and raw material.

E. J. Blume, general supervisor, is in charge of all outside production activities.

Benjamin E. Weimer has been appointed Purchasing Agent of the Wellman Bronze & Aluminum Company, Cleveland, Ohio, succeeding the late John Wellman.

Frank G. Sarver, Purchasing Agent of Magma Copper Company and San Manuel Copper Corporation, Superior, Ariz., has been appointed assistant to the vice president and general manager. R. L. Medlock, Assistant Purchasing Agent, succeeds Mr. Sarver as Purchasing Agent.

R. B. Hollier has been appointed Purchasing Agent for all departments of the City of Abbeville, La. Mr. Hollier is authorized to handle all purchases for all departments operating the city. He is also clerk at the city hall.



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for
your every
stainless piping
need



WHETHER you process chemicals . . . dairy products . . . or pharmaceuticals . . . you'll find everything you need for that stainless pipeline right in Frasse warehouse stock.

Pipe or tube—both are carried, seamless and welded, in a complete range of sizes. Pipe is carried to schedules 5, 10, 40 and 80. Valves, a complete assortment of threaded fittings—and the new threadless “Quikupl”—



*“Quikupl,” our new fitting, eliminates welding, threading and flaring—and makes line assemblies more rapid—less costly. It permits the use of economical light weight pipe or tube—reduces labor costs—stretches your pipeline dollar. You really save with “Quikupl.”

1st

Call FRASSE

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**STAINLESS STEEL PIPE
TUBE • VALVES • FITTINGS**

all are handy to complete your job. There's everything you need to hook up a new line or replace a section—from one convenient source.

Prompt deliveries from complete Frasse stocks help get your job done quicker. For your next stainless piping job call Frasse first—our current inventory of stainless pipe, tube and fittings, as well as facts about “Quikupl,” are available on request. Send for your copies today.

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• Peter A. FRASSE and Co., Inc. 13-AA

• 17 Grand St., New York 13, N. Y.

• Gentlemen: Please send me your current inventory of stainless steel pipe, tube and fittings along with facts about “Quikupl.”

• Name _____ Title _____

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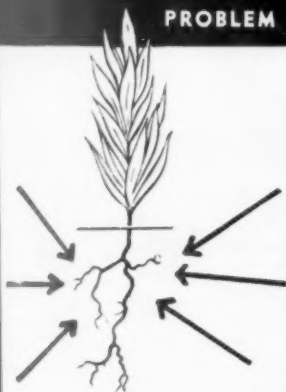
Peter A. FRASSE and Co., Inc.

New York 13, N. Y. 17 Grand St. Walker 5-2200	Philadelphia 29, Pa. 3911 Wissahickon Ave. Baldwin 9-9900	Buffalo 7, N. Y. P. O. Box K, Sta. B Bedford 4700	Syracuse 1, N. Y. P. O. Box 1267 Syracuse 73-5241
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PROBLEM WITH THESE DOLGE PRODUCTS



Please write for descriptive literature explaining how these tested DOLGE products can best be used for YOUR weeding requirements.

**FOR FREE
SANITARY SURVEY**
of your premises
consult your
DOLGE SERVICE MAN

DOLGE SS WEED-KILLER

Where no vegetation whatever is desired such as your parking places, walks and tennis courts. Penetrates deep down to plant roots and kills. Sterilizes the soil, preventing normal sprouting of wind-blown seeds. Weeding the thorough modern chemical way eliminates backbreaking toil and saves the cost of many labor-hours.

E.W.T. SELECTIVE WEED-KILLER (2-4-D)

The efficient way to control weeds on your lawns. Works its way down into the roots of brush, dandelion, plantain, poison ivy, ragweed, sumac and other obnoxious plants, but does not injure most turf grasses.

Dependable
DOLGE
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Warning!

Industrial skin accidents cause more lost time than broken bones

It just doesn't make sense to yell about safety in your plant and neglect occupational skin hazards from oils, acids and alkalis, which are among the most frequent and severe of all factory injuries. You're risking lost production, costly claims and good employee relations.

\$147.00* - that's the average skin trouble treatment cost in some areas. If you've escaped it, you're lucky. And you know it doesn't pay to push your luck. It's real cost cutting to see that your people have protective clothing, especially gloves.

The complete line of 32 non-allergic PIONEER Stanzoil Gloves of oil-and-acid resistant DuPont neoprene are meeting every hand-skin hazard in hundreds of plants - at very low cost per hour. Don't take chances with dangerous occupational dermatitis - write today for new Stanzoil catalog that shows you how to choose the safe economical glove for each job!

* "Industry's Big Itch", "Occupational Hazards", December 1952.

Industrial Products Division

The **PIONEER** Rubber Co., 240 Tiffin Rd. Wilford, O.
QUALITY GLOVES FOR 35 YEARS



FOR CLEANER CASTINGS DEVIL'S PUTTY

DEVIL'S PUTTY is a new graphite impregnated plastic refractory for: steel and gray iron ladle linings; making up spouts and runners; linings for ferrous and non-ferrous metal melting furnaces and similar applications.

DEVIL'S PUTTY reduces refractory inclusions, thus producing cleaner castings; withstands severe thermal shock without "sluffing off"; contains chemically treated graphite that will not burn out of the mix, which aids surface lubrication and permits cleaner and faster pours. Molten metal has no sticking tendency to DEVIL'S PUTTY lining, so, slag rises quickly to top for easy skimming.

Write for useful literature and the name of your nearest Botfield Distributor.

BOTFIELD

REFRACTORIES CO.

739 S. Swanson St. Philadelphia 47, Pa.
In Canada, Canadian Botfield Refractories Co., Ltd., 171 Eastern Avenue Toronto

Fred A. Dewenter has been appointed Purchasing Agent of the City of Tucson, Ariz. Mr. Dewenter, a former resident of Omaha, Neb., recently moved to Tucson with his wife and daughter.

A. H. Valentine has been appointed Director of Purchasing for Interstate Bakeries Corporation, Los Angeles, Calif. Mr. Valentine has been with Interstate since 1937 and has been director of traffic.

M. A. Starr has been appointed Purchasing Agent in charge of Department 53 at the Downey, Calif. location of North American Aviation, Inc. Other recent purchasing-procurement organization changes include:

S. D. Zemansky named assistant to Mr. Starr at Downey.

N. C. Dopheide has been transferred from Los Angeles to Downey as Purchasing Supervisor in charge of equipment, non-productive and electronics groups.

W. D. Bailey, general supervisor, is responsible for the operations, Vendor claims and rejections sections at the Los Angeles plant's Purchasing Department.

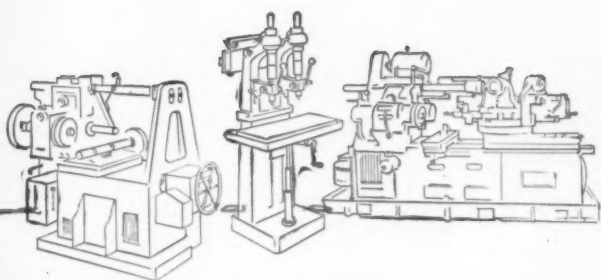
S. B. Pifer acts as supervisor of the operations section.

Everett L. Stoltz has been named Purchasing Agent for International Furniture Company, Chicago, Ill. Mr. Stoltz formerly was vice president in charge of sales for Samsel Time Control, Inc., Spring Valley, Ill.

Frederick W. Schneider, formerly Assistant Purchasing Agent for American Export Lines, has been appointed Purchasing Agent. Joseph V. Janssen, who has served in various administrative capacities in the Purchasing Department, has been named Assistant Purchasing Agent to succeed Mr. Schneider.

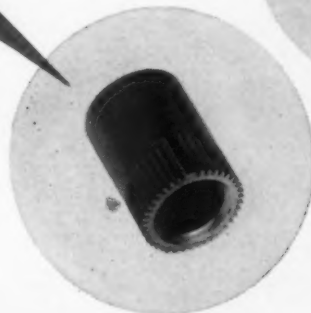
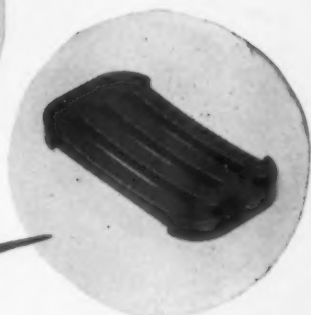
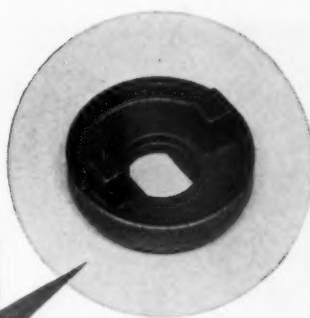
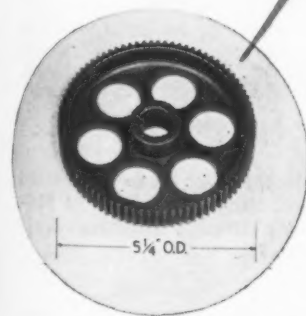
Major General Arthur Thomas, USAF, commanding general of the Eastern Air Procurement District, retired from active duty February 28, after more than 35 years of active service. General Thomas has been commanding general of the district since its activation in 1951. He was first assigned to New York as chief of the Air Force procurement field office there. Previously he was commanding general of the Far East Air Materiel Command in Japan.

General Thomas was the initiator of the plan whereby large defense prime contractors display specific items and components they wish to subcontract. These exhibits brought together in one central location the purchasing personnel of prime contractors and the potential subcontractors, to the advantage of both parties, as well as the Air Force.



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MACHINE TOOLS
FOR FINISHED
MACHINE PARTS**

***Specify* OILITE**
PRODUCTS OF SINTERED METALS



With OILITE YOU:

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Other OILITE Advantages Include:

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Field Engineers and Depots throughout U. S. and Canada



AMPLEX MANUFACTURING COMPANY

Subsidiary of Chrysler Corporation

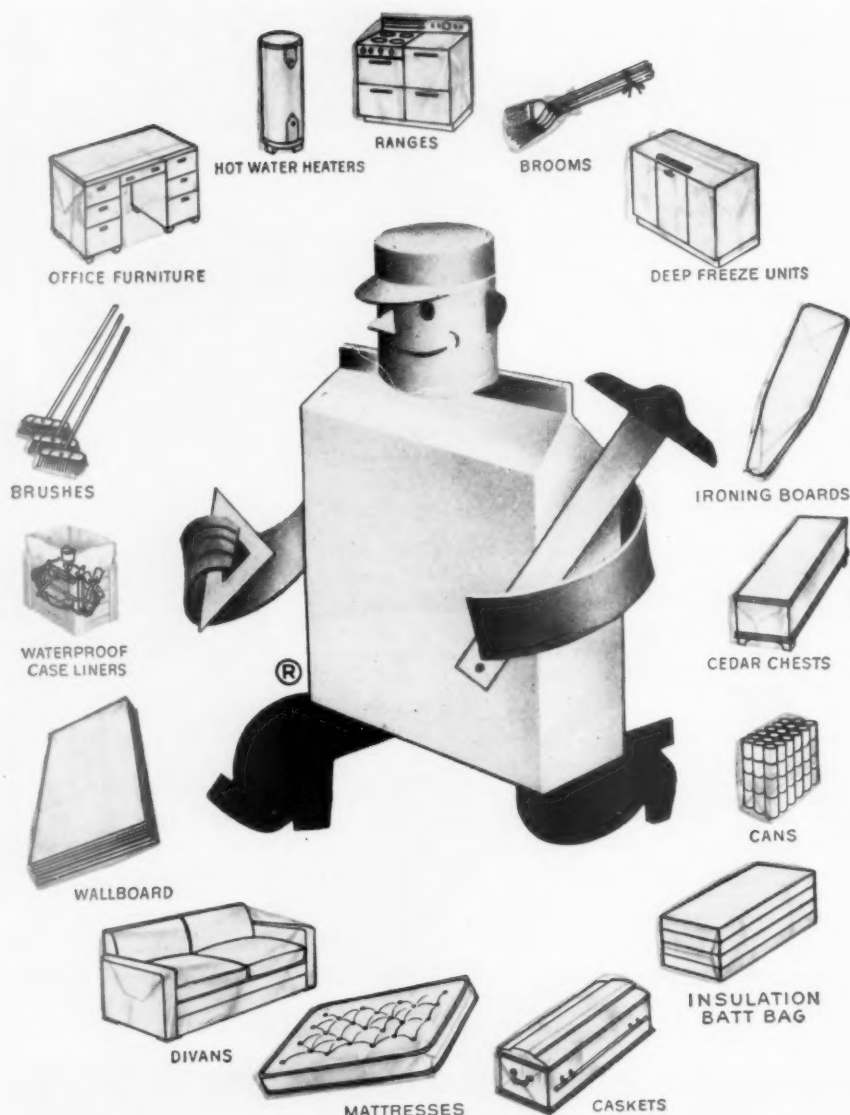
Detroit 31, Michigan

Oilite Products include: BEARINGS, Finished Machine Parts, Cored and Solid Bars, Permanent Filters, and Special Units.

APRIL, 1953

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285



TAKES THE RAP OUT OF WRAPPING

The Bemis Paper Specialty Man has more clever ways than a magician when it comes to cutting packing costs. If you now wrap in paper, it's likely he can show you practical ways to convert to special paper bags . . . some with self-seal closures . . . that can save packing time in your plant and lower packing and shipping costs for you.

Shown here are just a few of the products that use Bemis paper specialty packing to a big advantage.

Bemis



Paper Specialty Plants
1054 S. Vandeventer, St. Louis, Mo.
Albion, New York

Richard P. McBriarty, Purchasing agent at the Lever Brothers Company Baltimore, Md., plant for nearly 50 years, was recently honored upon his retirement at a testimonial given by more than 100 of his co-workers. Mr. McBriarty held various responsible positions in the research, production and purchasing divisions of Lever Brothers.

James W. Hadley has been named Purchasing Agent of American Building Maintenance Company, San Francisco, Calif.

Ray C. Manderbach has been named Vice President in Charge of Purchasing and Production at the Narrow Fabric Company, Reading, Pa.

Thomas J. Millon has been named Purchasing Agent of the Wisconsin division at Milwaukee of Cherry-Burrell Company, Chicago, Ill., succeeding the late Thomas A. Bauers.

Edward A. Dalton, 59, Purchasing Agent for the New York City Board of Transportation, died recently at his home in Hollis, N.Y. Born in Brooklyn, Mr. Dalton had been in the city's service since 1912 and held the post of Purchasing Agent since 1926.

A veteran of the 165th Infantry (the old 69th) he took part in all the major engagements of that outfit in France during World War I. He was a member of Father Duffy Post, Veterans of Foreign Wars, and was active in the American Legion.

Surviving are his widow, and son James, a cadet at the U.S. Military Academy, West Point; a brother, and two sisters.

Marcus L. Furrey has been appointed Purchasing Agent for Delta Manufacturing division of the Rockwell Register Corporation at Bellefontaine, Ohio. He succeeds Gilbert T. Scully, who has resigned.

E. P. Gallagher has been appointed General Purchasing Agent of Ford Motor Company's aircraft engineer division, Chicago, Ill.

C. R. Deible has been named Director of Purchasing for Knox Glass Associates, Knox, Pa. He formerly was plant manager of the Marienville Glass Company, Marienville, Pa.

Karl Vellemonte Ogden, City Purchasing Agent and chief clerk to the city manager of Lynchburg, Va., died recently in Lynchburg General Hospital. He was employed by the city 30 years and was appointed Purchasing Agent in 1923, holding the position until his death.

He was a member of St. John's Church, the Elks Club and attended E. C. Glass High School. Surviving are his widow, one daughter, a brother and two sisters.

34 DP

1/2 DRILL
4 HOLES

287

INDUSTRIAL Developments



National Lead Company, New York, N. Y., has purchased the assets of Doehler-Jarvis Corporation, Grand Rapids, Mich., and will operate it as a unit of National Lead. The acquisition of Doehler-Jarvis will result in an expansion of National Lead's metal fabricating divisions and give it large die casting facilities. As part of the transaction National Lead assumes all the debts and liabilities of Doehler-Jarvis.

Precision Rubber Products Corporation, Dayton, Ohio, has established a wholly-owned Canadian subsidiary, Precision Rubber Products (Canada) Limited, at Ste. Therese, de Blainville, Quebec, 18 miles from Montreal. The new plant at Ste. Therese has 14,000 square feet of floor space and begins production in April on a complete line of "O" rings and Dyna-Seals. The general sales office for Canada is located at 10 McNab Street, Hamilton, Ontario. H. G. Taylor is president of the new company, and R. E. Allen and W. A. Smith are vice presidents.

The Multi-Clean Products, Inc., St. Paul, Minn., has completed negotiations for the purchase of the manufacturing facilities of the Industrial Vacuum Cleaner Department of the General Electric Company. The transaction includes all of the production dies, patterns, fixtures and inventory. A new factory is under construction in St. Paul, where the production of the industrial line of vacuum cleaners will begin shortly. While the construction of the various models of industrial cleaners will be the same, they will be distributed under a new trade name.

Ford Motor Company has purchased a 160-acre site for the construction of a \$35 to \$50 million assembly plant at San Jose, Calif. Manufacturing space will occupy 1,000,000 square feet of space. Capacity of the plant will be approximately 150,000 cars and trucks annually for distribution to the 11 western states.



Living Proof of the effectiveness of "shrap jackets" made by Plywoods-Plastics Corporation is this young Marine, whose life-saving Doron armor vest is stopping a fusillade of .45 caliber bullets. The new body armor has already won the confidence and gratitude of the thousands of American soldiers and Marines who wear it for protection in the front lines.

Plywoods - Plastics Corporation, Hampton, S. C., a subsidiary of Westinghouse Electric Corporation, is making U. S. Marine Corps body armor—called "shrap jackets" by American fighting men. In announcing that Westinghouse is making armoring material for the Marine Corps, Eugene R. Perry, Micarta Division manager, said the "shrap jackets" get their life-saving properties from three things—the way they are made, and their two basic ingredients, glass cloth and a synthetic resin. This combination enables the material, known as Doron, to actually stop deadly mortar and grenade fragments and similar low velocity missiles.

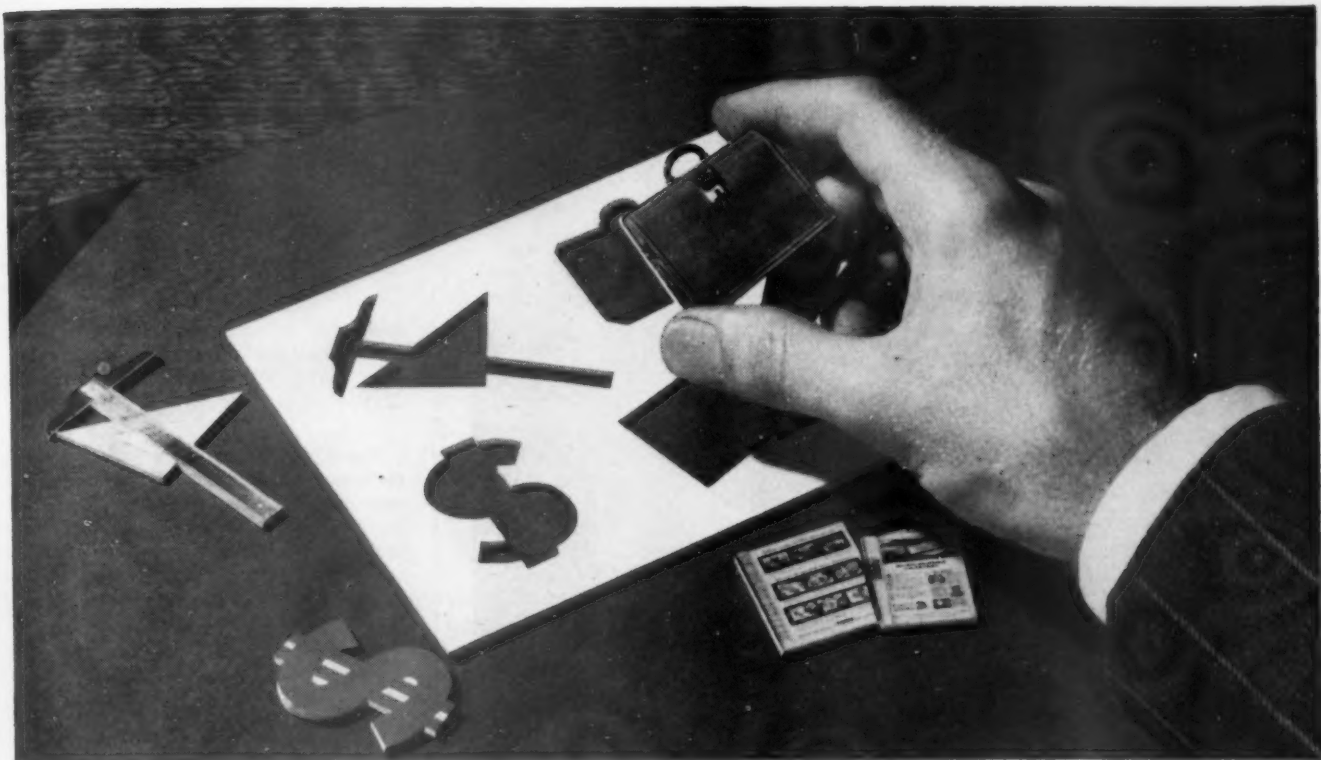
Reports indicate that the armor, which weighs less than eight pounds, has been 90 to 95 per cent successful in preventing serious wounds of the torso. More complete statistics will not be available until completion of a survey now underway in Korea.

When a fragment or a small caliber bullet strikes the material, the layers of impregnated glass cloth separate as

the missile attempts to smash its way through. This delamination actually sets up a cushioning effect that instantly reduces the velocity of the fragment to practically zero.

Doron is made by applying heat and pressure to layers of resin-impregnated glass cloth. The plates themselves, one-eighth of an inch thick and 5¼ inch square, are sewn into the pockets of heavy nylon vests. About 20 plates go into each vest and overlap each other like fish scales.

International Business Machines Corporation, New York City, has announced plans to begin construction this spring of a new plant at Greencastle, Ind., to be completed early in 1954. The 180,000-square foot plant will be devoted exclusively to the manufacture of IBM cards used in connection with the company's electric and electronic accounting machines. The plant will be of structural steel frame construction with an exterior of brick and Indiana limestone.



Why value is no puzzle to a top P.A.

JUDGING the value of a component part may be a puzzle for some people. But the top P.A. pieces together the true answer with the four symbols shown above.

First, he considers sales (symbolized by the briefcase). A top P.A. wants high *quality* component parts that will increase the saleability of his company's product.

Second, a top P.A. considers engineering *service* (T-square). He wants to buy component parts backed by the most complete engineering service.

Third, a top P.A. considers *public acceptance* (advertisements). He wants component parts that are widely accepted by the public.

Fourth, he considers price, (dollar sign), because a top P.A. is always conscious of cost.

However, when he pieces together these four factors, he knows that price alone is outweighed by the other three—quality, service and public acceptance. This formula shows you why:

$$\text{Value} = \frac{\text{quality} + \text{service} + \text{public acceptance}}{\text{price}}$$

There's never any puzzle about which tapered roller bearings are the best. Timken® bearings have the highest quality, the best engineering service, the widest public acceptance (see P.A. Notes). The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

TIMKEN
TRADE-MARK REG. U. S. PAT. OFF.
TAPERED ROLLER BEARINGS



NOT JUST A BALL NOT JUST A ROLLER THE TIMKEN TAPERED ROLLER BEARING TAKES RADIAL AND THRUST LOADS OR ANY COMBINATION

P.A. Notes:

FROM MAINE TO CALIFORNIA. Engineers at strategic locations from coast to coast are always ready to help you with bearing mounting and assembly problems. Quick assistance is as near as your phone.



POPULAR STORY. Extensive advertising conducted by the Timken Company will make an estimated 688,000,000 reader impressions this year. It's one big reason for the tremendous public acceptance of Timken bearings.

LEADER IN QUALITY. Timken bearings have always been first in quality. Others have tried to copy its designs, materials, tolerances, surface finish. But Timken bearings have always led the parade.





"Nothing personal, understand. But you should have learned long ago to build your kit around good tools.

Look at those Bonney tools of mine. Cost less than you think, and for my dough the best any mechanic can buy.

If you're short of cash right now, get yourself some BON-E-CON* wrenches. They're real mechanics' tools with the regular Bonney guarantee, and priced so that an apprentice can afford them.

With those as a starter, before you know it you'll build up to a kit like mine."



Remember. Your local Bonney jobber, as well as Bonney, stands behind the tools you buy. He has Bonney tools priced to fit your needs as well as your budget.

This is the way the men who buy their own tools feel about them. More and more production-minded purchasing agents recognize the value of this attitude on the part of mechanics.

BONNEY FORGE & TOOL WORKS • ALLENTOWN • PENNSYLVANIA

Allied Chemical & Dye Corporation's General Chemical Division has announced plans to build a large research laboratory at Morristown, N. J. The new facility will permit General Chemical to expand its laboratory research program and will replace the division's present research laboratory at Laurel Hill, N. Y. The new laboratory will be located on the outskirts of Morristown on Columbia Road, adjacent to Allied Chemical's Central Research Laboratory. Plans call for a modern, functional laboratory building of three-story brick construction. The new facility will have 50,000 square feet of floor space.

Sintering Machinery Corporation, Netcong, N. J., and **Equipment Development Company, Inc.,** Montclair, N. J., have concluded an agreement for the development, manufacture and sale of a complete line of filtration equipment to be marketed under the trade name of "Edco-Sintering." Under the agreement, Sintering will manufacture and stock filtration units and parts, while Equipment Development will design, engineer and sell the "Edco-Sintering" line.

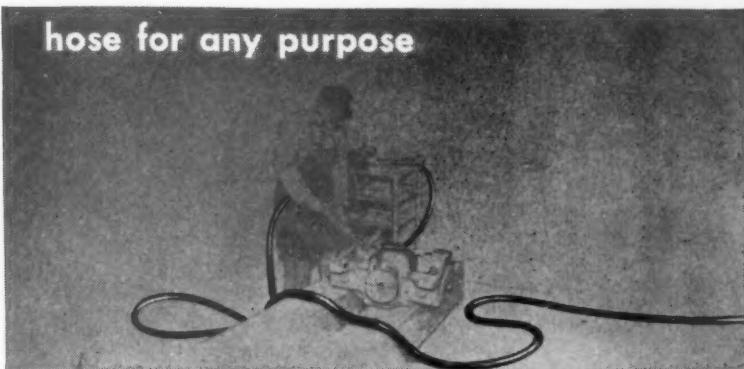
Scully-Jones & Company, has completed an extensive expansion program in its present Chicago, Ill., location. The program includes a new building that adds 14,000 square feet for manufacturing, storage and shipping, and a relocation of production equipment to reduce material handling, facilitate "flow" and release space required for office, engineering, service and sales departments. A combination cafeteria and recreation room for workers and an adjoining display area was also added.

Heinrich Tools Incorporated Racine, Wis., is the new corporate name of the National Machine Tool Company, which has manufactured machine tool products since 1918.

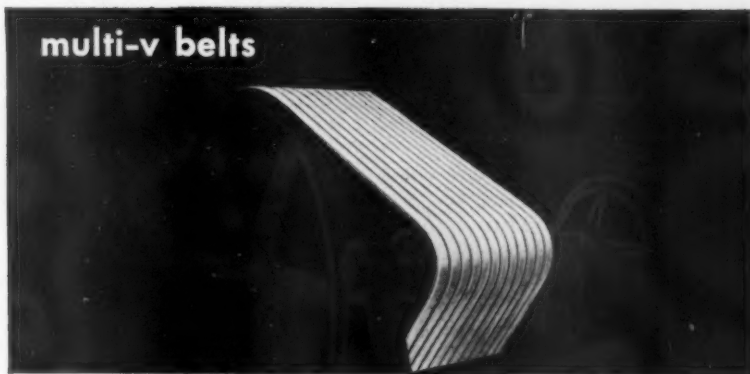
The Pall Filtration Companies, Glen Cove, N. Y., have been formed through the affiliation of three manufacturing and engineering organizations, Micro Metallic Corporation, Aircraft Porous Media, Inc., and the Porous Plastic Filter Company. The new organization, under the Direction of David B. Pall, is designed to provide industry with optimum engineering, production and research services in the fields of filtration and porous media.

May-Fran Engineering, Inc., Cleveland, Ohio, has announced that the world's largest scrap handling system has been designed and constructed for the Grand Rapids Plant No. 1 of Fisher Body Division, General Motors Corporation. The giant installation can handle 500,000 pounds of scrap a day. A one-man controlled conveyor network collects scrap from presses, transports it to baler house and discharges bales into freight cars on outdoor siding.

hose for any purpose



multi-v belts



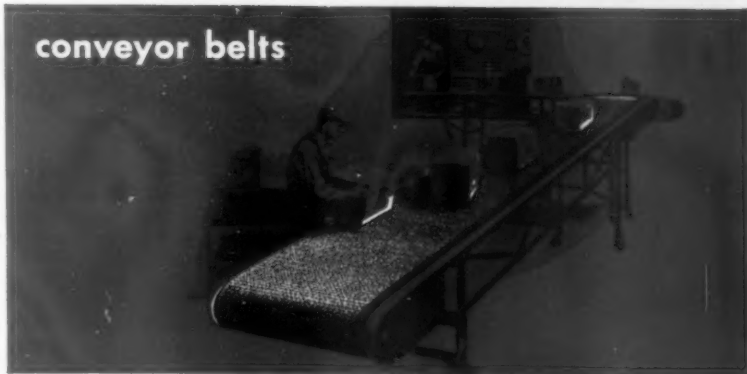
Long lasting dependability

of Thermoid Products saves important production and maintenance dollars. That's why so many leading companies, in all industries, specify Thermoid Hose, Multi-V Belts, Conveyor Belts, and Transmission Belting.

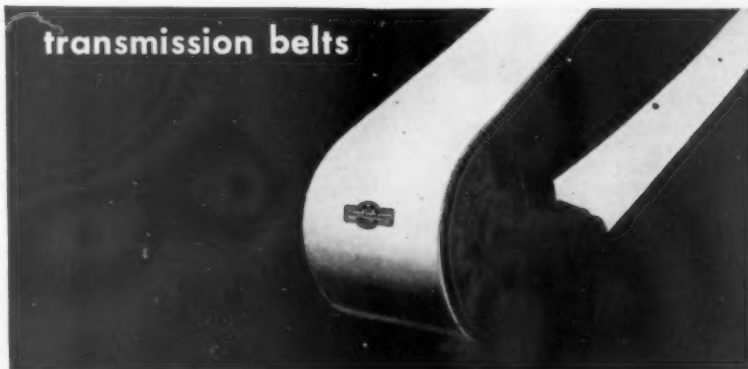
The companies who use these "built-for-the-job" products like the service they get from their Thermoid Distributors—plus the help of experienced Thermoid Sales Engineers with their intimate knowledge of your industrial rubber problems.

It will pay you to specify Thermoid.

conveyor belts



transmission belts



Thermoid

Conveyor & Elevator Belting • Transmission Belting
F.H.P. & Multiple V-Belts • Wrapped & Molded Hose

Rubber Sheet Packings • Molded Products
Industrial Brake Linings and Friction Materials

Thermoid Company • Offices & Factories: Trenton, N. J., Nephi, Utah

ROLOCK

FABRICATED ALLOYS

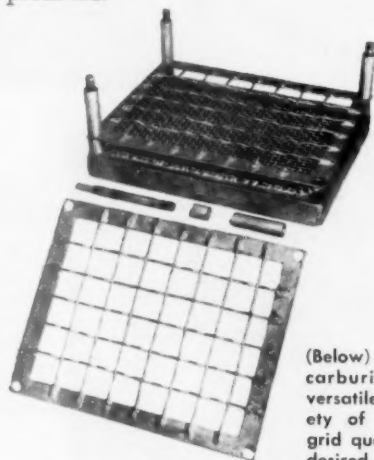
HEAT AND CORROSION RESISTANT

WHY FABRICATED?

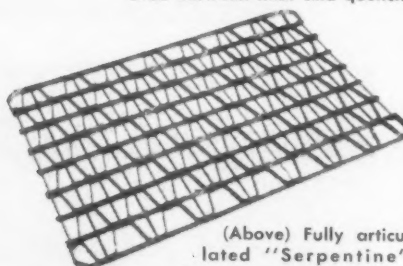
All Rolock heat treating equipment is fabricated... not cast. Every carrier is job-engineered for the specific use and made from the correct metals and alloys for maximum resistance to all conditions of exposure, shock and abrasion. Especially successful are Rolock applications of nickel alloys... replacing heavy castings with durable, lighter weight fabrications. The examples shown below, while custom-built, can be adapted to your needs. We welcome your requests to solve your heat treating equipment problems.



(Above) Stainless drop-bottom pit furnace basket for quality, uniform heat treat. Saves seconds between heat and quench.

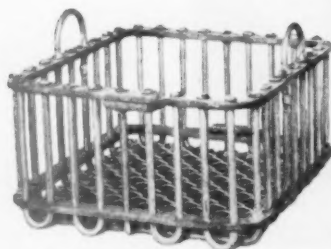


(Above) Rugged assembly for carburizing shafts in pusher furnace. Adjustable posts position fabricated alloy screens; mesh to suit work. Light weight, high pay load, long life.



(Above) Fully articulated "Serpentine" brazing or heat treating tray, retains shape. Heavy or light, any width, length, depth. Many uses at lowest hourly cost.

(Below) Sectional lift post carburizing fixture. Most versatile for handling variety of parts. Each loaded grid quenched separately, if desired.



(Above) Alloy carburizing basket. Loose joints expand under heat. Rugged, flexible construction resists abuse.



(Right) Inconel basket assembly for nitriding. Only required baskets need be used for less than capacity operation... reducing furnace load.



Offices in: PHILADELPHIA • CLEVELAND • DETROIT • HOUSTON • CHICAGO • ST. LOUIS • LOS ANGELES • MINNEAPOLIS • PITTSBURGH

ROLOCK INC. • 1272 KINGS HIGHWAY, FAIRFIELD, CONN.

JOB-ENGINEERED for better work
Easier Operation, Lower Cost

United States Steel Corporation set two world's records and broke 16 other production records during January at its Gary, Ind., sheet and tin mill. The 80-inch hot strip mill for the fourth successive month set a new world's record, producing more than a quarter-million tons of steel monthly. The 54-inch wide four-stand tandem cold reducing mill became a world's record holder by producing 77,391 net tons of cold reduced strip steel. The other 16 plant records were set in small amounts in various departments.

Newark Wire Cloth Company, Newark, N. J., has purchased the entire business of Cosgrove Wire Cloth Company, Inc., Belleville, N. J. The purchase includes the name, plant, inventory and equipment and other assets, but the plant will continue to be operated under the name Cosgrove Wire Cloth Company, Inc., as a fully-owned subsidiary of Newark Wire Cloth Company.

Breuer Electric Mfg. Company, Chicago, Ill., has acquired additional plant facilities through the purchase of an 8,000 square foot plant adjoining the present plant at 5100 N. Ravenswood Avenue.

Ram Meter, Inc., Ferndale, Mich., has developed a new wire-marking machine for use where specifications for electrical equipment are required. The machine marks each wire legibly and permanently, with a code designation near each end at intervals for its entire length. Any size insulated wire from 20 to 4 can be hot-embossed with either black or white plastic code letters one inch from each end, with additional imprints at intervals of 2" to 12", as desired, along the wire, and the wire cut to any desired length from a 2" minimum to a maximum of 12".

Federal Tool Engineering Company has set up a contract welding division in its recently completed building at 1384 Pompton Avenue, Cedar Grove, N. J. A 300% increase in production space has made this division possible. Specialized welding services are being rendered to augment manufacturers' own welding departments or as a substitution for such departments. Present equipment includes three automatic studding machines and two automatic welding units. Expansion of the division will be geared to specific welding requirements. Technical counsel on problems of welding is offered by the company.

Bakelite Company, a division of Union Carbide and Carbon Corporation, has begun construction of a new plant for expanded production of Bakelite fluorothene resins at South Charleston, W. Va. The plant is expected to be completed by the middle of 1953. The plastic resists heat up to 400 deg. F and withstands fuming nitric acid.

behind this trademark



70 YEARS OF GLASSMAKING



The newest Fiber Glass plant in the world is Pittsburgh Plate Glass Company's at Shelbyville, Indiana. The first unit of this plant was placed in operation last autumn. Today, within less than six months, PPG Fiber Glass is available to serve the varied needs of industry for Superfine Insulation and for Yarns, Strands and Roving.

Behind this most modern Fiber Glass operation are the skills acquired in 70 years of glassmaking—plus the broad business experience and facilities which are so important in handling the requirements of customers.

If you use Fiber Glass—or contemplate its use for any application—you are invited to investigate PPG's facilities for serving you. Pittsburgh Plate Glass Company, 632 Duquesne Way, Pittsburgh 22, Pa. District Offices: Chicago, Cincinnati, Cleveland, Detroit, New York, Washington.

new research on Fiber Glass

Continual research has been one of the most important factors in maintaining leadership for Pittsburgh Plate Glass Company, having been responsible for such outstanding developments as—

- the famous Pennvernon method of drawing window glass
- Carrara structural glass
- Herculite all-glass doors
- massive windows for atomic research laboratories

PPG's research will be equally important in the continued development of its newest product, Fiber Glass. Your business may be among the first to profit. Your inquiries are invited.



PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

HOW WOULD YOU MOVE THIS

Pile of Parts?



LIKE THIS?... OR THIS?...

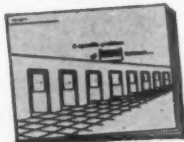
Generalift



PALLET BOXES

1. CUT MATERIALS HANDLING COSTS
2. SHARPLY REDUCE STORAGE COSTS

Write for your FREE copy of "The General Box." It shows how to Cut Packing and Shipping Costs.



General

BOX COMPANY

GENERAL OFFICES:

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DISTRICT OFFICES AND FACTORIES: Cincinnati, Denville, N. J., Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, Sheboygan, Winchendon. General Box Company of Mississippi, Meridian, Miss. Continental Box Company, Inc., Houston, Dallas

ENGINEERED SHIPPING CONTAINERS FOR EVERY SHIPPING NEED

- Wirebound Crates and Boxes • Generalift Pallet Boxes • Generalite Beverage Cases
- Cleated Corrugated and Watkins-Type Boxes • All-Bound Boxes • Corrugated Boxes

Lee Healey Company, Glendale, Calif., is expanding into the industrial field, after 20 years of manufacturing Bowden casings and wire and choke control assemblies for the marine trade. The casings are available to the industrial trade in various size and length requirements. Healey will make any type of wire to any size and length requirements.

Wright-Hibbard Industrial Electric Truck Company, Inc., Phelps, N. Y., now has a completely new management group directing its activities. W. B. Huntley is the new president and treasurer; Richard E. Mayberry is vice president and sales manager, and C. J. Spacher is vice president and production manager. The company will continue to manufacture three lines of industrial electric trucks and the present low-lift platform and high-lift or tiering platform fork lifts. A redesigned line of fork lift trucks also has been announced.

The Soreng Products Corporation, Schiller Park, Ill., a newly-organized manufacturing concern, has acquired ownership of the Soreng Manufacturing Corporation, Schiller Park, and Sampsel Time Control, Inc., Spring Valley, Ill. The new company will make it possible to better serve the home appliance, automotive and aircraft industries through more thorough engineering and production techniques, and more efficient distribution.

Inland Steel Company, Chicago, Ill., has announced that Inland Steel Container Company, a wholly-owned subsidiary corporation since 1939, has been made a division of the parent company effective March 1. The merger is being effected for technical reasons only, and will mean no changes in the container firm's operations or personnel.

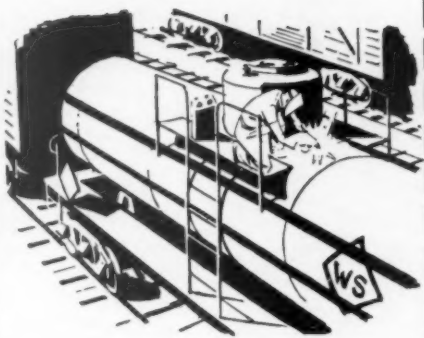
Midwest Piping Company, Inc., St. Louis, Mo., is the new name of the Midwest Piping and Supply Company, Inc., following a vote at a recent stockholders' meeting. There has been no change in ownership, management, personnel or activities of the company, nor is any contemplated. The change was made to make the name more accurately descriptive of the company's operations.

Uniform Tubes, Collegeville, Pa., has announced its incorporation, effective January 1. Officers of the new corporation are: Albert H. Mainwaring, president and chairman of the board; David T. MacNair, secretary, and A. Bruce Mainwaring, treasurer.

Harbison-Walker Refractories Company has completely converted its Warm Springs, Calif. plant to the production of chemically bonded basic refractories. The plant formerly was a producer of the alumina-silica classes of refractories.



Alcoa Aluminum takes all finishes that other metals will take—plus gleaming, rust-resistant anodic coatings which are best on aluminum.



While large structures are usually arc-welded, aluminum assemblies also can be joined by torch welding, all three resistance-welding processes—spot, seam or flash, and brazing.

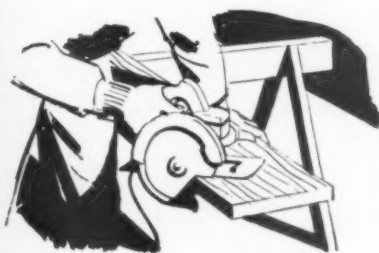
Products marked*
are available from
your local
Alcoa Distributor
listed here



* Lightweight, easy-to-handle Alcoa Industrial Building Sheet (only 56 pounds per square) goes up fast . . . reduces dead load . . . stays good looking without painting or finishing.



Corrosion-resistant bearings of Alcoa Aluminum lower diesel maintenance. They are solid metal all through.



Alcoa Aluminum Die Castings can weigh one-third as much as heavy metal castings, yet provide great strength. They are exceptionally easy to machine . . . take all finishes . . . often cost less.



* Almost any shape can be produced as an Alcoa Aluminum Extrusion—hollow, semihollow, solid. Extrusions put the metal where it's most needed, yet use less metal than rolling or fabricating by welding or riveting.

ALABAMA

Birmingham
Hinkle Supply Co.

CALIFORNIA

Los Angeles
Ducommun Metals
& Supply Co.
Pacific Metals
Co., Ltd.
San Francisco
Pacific Metals
Co., Ltd.

COLORADO

Denver
Metal Goods Corp.

CONNECTICUT

Milford
Edgcomb Steel of
New England, Inc.

FLORIDA

Hialeah
Florida Metals, Inc.
Jacksonville
Florida Metals, Inc.
Tampa
Florida Metals, Inc.

GEORGIA

Atlanta
J. M. Tull Metal
& Supply Co., Inc.

ILLINOIS

Chicago
Central Steel &
Wire Co.
Steel Sales Corp.

LOUISIANA

New Orleans
Metal Goods Corp.

MARYLAND

Baltimore
Whitehead Metal
Products Co., Inc.

MASSACHUSETTS

Cambridge
Whitehead Metal
Products Co., Inc.

MICHIGAN

Detroit
Central Steel &
Wire Co.
Steel Sales Corp.

MINNESOTA

Minneapolis
Steel Sales Co.
of Minn.

MISSOURI

Kansas City
Metal Goods Corp.
St. Louis
Metal Goods Corp.

NEW HAMPSHIRE

Nashua
Edgcomb Steel of
New England, Inc.

NEW JERSEY

Harrison
Whitehead Metal
Products Co., Inc.

NEW YORK

Buffalo
Brace-Mueller-
Huntley, Inc.
Whitehead Metal
Products Co., Inc.
New York
Whitehead Metal
Products Co., Inc.
Rochester
Brace-Mueller-
Huntley, Inc.
Syracuse
Brace-Mueller-
Huntley, Inc.
Whitehead Metal
Products Co., Inc.

NORTH CAROLINA

Charlotte
Edgcomb Steel Co.

OHIO

Cincinnati
Williams & Co., Inc.
Cleveland
Williams & Co., Inc.
Columbus
Williams & Co., Inc.
Toledo
Williams & Co., Inc.

OKLAHOMA

Tulsa
Metal Goods Corp.

OREGON

Portland
Pacific Metal Co.

PENNSYLVANIA

Philadelphia
Edgcomb Steel Co.
Whitehead Metal
Products Co., Inc.
Pittsburgh
Williams & Co., Inc.

TEXAS

Dallas
Metal Goods Corp.
Houston
Metal Goods Corp.

WASHINGTON

Seattle
Pacific Metal Co.

WISCONSIN

Milwaukee
Steel Sales Corp.

The easy way to find suppliers

Need names, addresses or telephone numbers of suppliers *fast*? Then do what purchasing agents all over the country are doing... look in the 'yellow pages' of the telephone directory.

It's the quick, efficient way to find essential buying information. Simply open your telephone directory to the 'yellow pages.' There you'll find suppliers of practically all industrial and consumer products.

Save time. Take the quick, easy way—use the 'yellow pages.'



Vail Manufacturing Company, Chicago, Ill., has acquired the E. H. Hotchkiss Company, Norwalk, Conn. The Hotchkiss Company will continue to operate as a separate unit as a subsidiary of Vail Manufacturing Company. All machinery, equipment and stock has been removed to Chicago, and service hereafter will be rendered from Chicago. All correspondence in the future will be directed to the Hotchkiss Company, 900 East 95th Street, Chicago 19, Ill.

Duroflex Incorporated, Buena Vista, Va., has entered the synthetic diaphragm and coated fabric field. Edward C. Hemes is president of the new corporation. He formerly was executive vice president and a member of the board of directors of Vulcan Rubber Products, Inc. The new concern has been formed primarily to service and supply the gas utility industry with meter, regulator and other control diaphragms. It will also produce diaphragms for the automotive and aircraft industries, and a full line of coated fabrics for general industrial use.

The Youngstown Sheet and Tube Company, Youngstown, Ohio, has sharply increased iron products at its Indiana Harbor Works, East Chicago, Ind., with its new No. 3 blast furnace now in operation. The furnace, with a hearth diameter of 28 feet, has a rated capacity of 1,500 tons daily. The new blast furnace is the third major unit to go into production since the company's Indiana Harbor expansion program was launched in 1950. The new open hearth department of eight 250-ton furnaces went into production last May and a new 75-oven coke battery began pushing coke last fall. A blooming mill and a cold rolling unit are under construction.

Reprint Steel Casting Handbook

Unprecedented demand for the *Steel Castings Handbook*, official manual of the steel castings industry, has necessitated a second printing of the new revised volume compiled and published by the Steel Founders' Society of America, 920 Midland Bldg., Cleveland 15, Ohio. The handbook gives complete general data on steel castings, specifications, applications, design principles, mechanical and physical properties, and related technical materials.

The completely revised volume, first published late in 1950 to supplant the original edition, incorporates 520 pages of text, 440 illustrations and 120 essential tables. It includes 16 definitive chapters covering the entire range of steel castings activities. Price of the standard edition is \$4.00.

When You Need Better Chain...
Get the Best



GET *Round* CHAIN

Outside, *Round* Chain, made by *Round* Chain Companies, might look like other chain, but there the similarity ends. Inside, *Round* Chain is superior—superior because it is the result of generations of chainmaking experience . . . PLUS recent new developments by *Round* metallurgists.

This experience and these developments make possible chainmaking advantages like these:

- Choosing the kind of raw metal best suited for making each type of chain.
- Forming and welding techniques which assure maximum link strength.

- Heat treating in special furnaces with automatic controls for maximum hardness and toughness.
- Producing at a rate consistent with quality control.
- Inspecting by microscope and spectroscope to check on physical composition and to detect flaws.

Next time you need chain, remember it's what is *inside* a piece of chain that determines the service and life you'll get from it. Today as always, the *IN*side of *Round* Chain is the source of its superiority . . . is the factor that enables it to merit the term "BEST".

Next time, get the BEST. Get *Round* Chain.

Wherever you are... you're near a *Round* Chain Factory

Locations:

- ROUND SEATTLE CHAIN CORP. Seattle 8
- ROUND SEATTLE CHAIN CORP. Portland 10
- ROUND CALIFORNIA CHAIN CO. So. San Francisco
- ROUND LOS ANGELES CHAIN CORP. Los Angeles 54
- THE ROUND CHAIN & MFG. CO. Chicago 38
- THE CLEVELAND CHAIN & MFG. CO.
- OHIO HOIST & MFG. CO.
- THE PLATING AND GALVANIZING CO. Cleveland 5
- ROUND BRIDGEPORT CHAIN & MFG. CO. Bridgeport 1
- ROUND WOODHOUSE CHAIN & MFG. CO.
- ROUND ALLOYS MFG. CO. Trenton 7
- THE SOUTHERN CHAIN & MFG. CO. Birmingham 4

The *Round* Line Includes Welded and Weldless Chain for Every Purpose

Commercial • Industrial • Automotive • Farms • Homes • Construction
Logging • Marine • Oil Field • Railroad

Related *Round* Products

Chain Fittings and Accessories • Electric and Hand Hoists • Turnbuckles
Load Binders • Trolleys • Cranes • Blow Torches

ORDER FROM YOUR WHOLESALER

THE OLDEST NAME *Round* IN CHAIN

NEWS OF YOUR SUPPLIERS

E. W. Ristau has been appointed vice president in charge of sales of the Power Tool Division of **Rockwell**



E. W. Ristau

Manufacturing Company, Pittsburgh, Pa. Mr. Ristau will be located in the Rockwell home office in Pittsburgh.

A. O. Smith Corporation, Milwaukee, Wis., has opened a new service branch of its Product Service Division at Oakland, Calif., under the direction of George A. Carlson.

Louis A. Selin has been appointed assistant sales manager of **Eaton Manufacturing Company's Pump Division**, Detroit, Mich. Mr. Selin joined the pump division in 1943 and was named quality representative in 1947 and sales representative in 1949.

Parker Appliance Company, Cleveland, Ohio, has opened district sales offices in Cleveland and Los Angeles, Calif. Edward W. Hollis, who has been manager of Parker's rubber division, heads the new sales office at 1770 London Road, Cleveland, while Donald T. Boody, for the past year Pacific Coast sales engineer for Parker's industrial products, heads the new office at 5827 West Century Boulevard, Los Angeles. Three sales engineers will work out of the Cleveland office. They are: Howard E. Jacob, Gordon Miscall and W. O. Murray. Three sales engineers will work out of the Los Angeles office. They are: James K. Dysart, R. H. Wagner and E. M. Young. E. C. Robinet will operate from San Francisco, and D. N. Allensworth will work out of Seattle.

The Standard Pressed Steel Company, Jenkintown, Pa., has opened a warehouse at 815 North Sepulveda Boulevard, Los Angeles, Calif., to service 11 states and British Columbia.

PURCHASING



DE-STA-CO'S Multi-Stamping process holds the answer for small, intricate parts in economical volume quantities. Our high-speed Four-Slide automatic machines complete parts (2½" x 12¼" maximum) in a single stroke, eliminating secondary handling and multiple inspections. Such operations as piercing, forming, swaging, embossing, twisting, curling and reforming from coiled stock are completely finished ready for their only inspection. Multi-Stamping is especially advantageous where forming around a mandrel is required.

You'll benefit too, from the economies that result by using our Multi-Stamping process. We'll be glad to quote on your requirements; just send a sample, drawing or description together with quantity required.



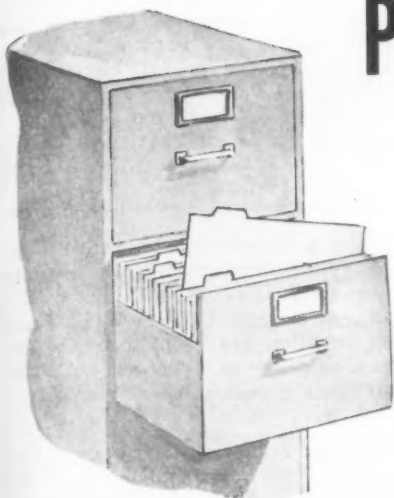
Our automatics comprise just one department of our modern plant. Other equipment enables us to handle material up to ¾" thickness, with press beds up to 48" x 72" at pressures up to 250 tons. Drawing capacity 4" deep; coining presses to 400 tons. Special valves, shims and other exacting work are economically produced to rigid specifications.

Write for a copy of our Multi-Stamping Brochure which illustrates our plant facilities in detail.

DETROIT STAMPING COMPANY



408 MIDLAND AVENUE • DETROIT 3, MICHIGAN



Purchasing Records will prove **NEOPRENE** products give superior performance

Striking evidence of the dependability of neoprene products can be found by reviewing your purchase orders. You'll note the longer time between orders . . . the fewer replacements necessary . . . the lower inventories possible. It all adds up to less paper work for you and a substantial saving on V-belts, hose, gloves—or whatever neoprene products you buy. If you're not already profiting with durable neoprene products, be sure to ask your distributor for more information . . . or write to us.



SOLID TIRES—The purchasing agent of a large meat-packing plant found that ordinary rubber tires on material-handling trucks quickly deteriorated from exposure to animal fats, oil and extremes in temperature. Neoprene tires were installed . . . have given over four years of trouble-free service!

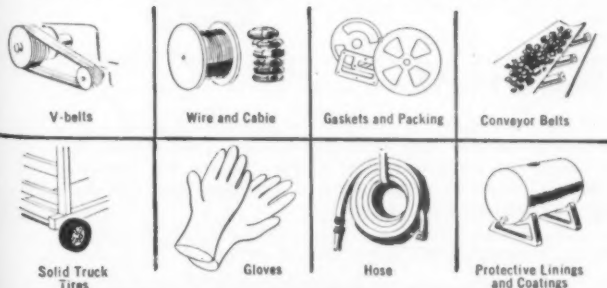
Neoprene solid tires resist oil and grease . . . withstand heat and low temperature stiffening.



WORK GLOVES—Neoprene-coated work gloves were purchased as replacements for ordinary fabric-type gloves in a large metal-working plant. Hand injuries due to contact with acids were reduced 78%. And the new gloves outlasted the old type many times over!

Neoprene gloves are durable . . . resist abrasion and most chemicals.

Specify NEOPRENE when you buy these products:



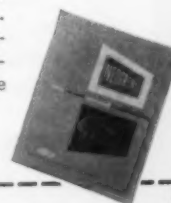
NEOPRENE

The rubber made by Du Pont since 1932



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

FREE ILLUSTRATED BOOKLET tells you why neoprene products give long-lasting service . . . shows you many of neoprene's important applications. It's a valuable reference guide for purchasing rubber goods of all types. Send in the coupon for your copy.



E. I. du Pont de Nemours & Co. (Inc.)
Rubber Chemicals Division S-4
Wilmington 98, Delaware

Please send me the free booklet describing neoprene products.

Name _____ Position _____

Firm _____

Address _____

City _____ State _____

HOWE Scales



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OFF THE
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Let Us Send You This New Condensed Catalog

The NEW Howe Scale Condensed Catalog showing a complete line of industrial scales and hand trucks is yours for the asking. Includes data on the new Howe Weightograph and the new Howe Tape-Drive Dial Scale line for improved weighing operations. Send for your copy today.

The **HOWE SCALE Co.**
RUTLAND, VERMONT

Dept. P4, Rutland, Vermont

Please send me:
HOWE CONDENSED SCALE CATALOG NO. 11 ☐
HOWE HAND TRUCK CATALOG NO. 15-B ☐

Name _____
Title _____
Company _____
Address _____
City _____ State _____

Chicago Nipple Manufacturing Company, Chicago, Ill., has appointed David J. Gent general manager of sales. Prior to his new appointment Mr. Gent was assistant manager of sales for tubular products of Jones & Laughlin Steel Corporation, Pittsburgh, Pa.

Gustin-Bacon Manufacturing Company has appointed George R. McMullen as manager of its Kansas City sales division, with headquarters in the Centennial Building, Kansas City, Mo. W. M. Doughman and Grant I. Wyrick have been assigned to the division as sales and service engineers.

Wall Colmonoy Corporation, Detroit, Mich., has appointed Frank R. Reynolds sales manager of the Furnace Processing Division. Mr. Reynolds will direct sales activities of the company's jobbing facilities for bright annealing, normalizing, and copper and silver brazing. He was formerly assistant sales manager of Northern Steel Company and also was associated with Detroit Steel Corporation.

The Lowe Brothers Company, Dayton, Ohio, has appointed Fred McDaniels as a maintenance sales representative for the firm's central district area, serving the Ohio, West Virginia and Kentucky areas.

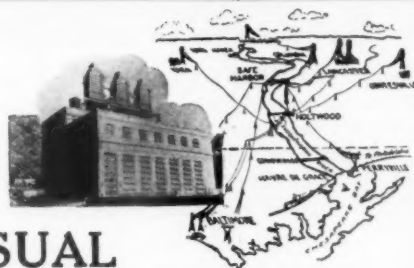
The Micro Division of **Minneapolis-Honeywell Regulator Company** has established a new engineering service and sales office at 731 Mount Read Boulevard, Rochester, N. Y. Dale S. McQuiston, Jr. heads the new regional office which covers the territory as far east as Binghamton and as far south as Jamestown.

The International Resistance Company, Philadelphia, Pa., has opened a new sales office at 4013 North Milwaukee Avenue, Chicago 41, Ill. Frank R. McMillan has been appointed district manager and Robert M. Butler has been named assistant manager.

Bowser Technical Refrigeration, Terryville, Conn., has announced the appointment of Karl D. Klein as general sales manager. He replaces Thomas Lopicollo, who is no longer with the company.

E. M. Richardson has been named general sales manager of **Nice Ball Bearing Company**, Philadelphia, Pa. He was formerly manager of eastern division sales.

Fred L. Steging has been named vice president of **Lowebe Co., Inc.**, Chicago, Ill. Mr. Steging formerly was president of Nu-Enamel Corporation.



... UNUSUAL

The Pennsylvania Water & Power Company's Holtwood steam electric generating plant has been fueled exclusively for 14 years with coal dredged from the Susquehanna River, right at its front door.

NOT UNUSUAL ...

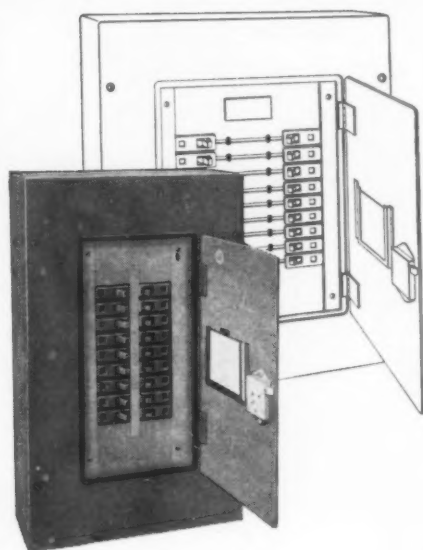
among power plant operators is the selection of replacement boiler and pressure tubes from Murray's large warehouse stocks and wide range of sizes — immediately available for prompt delivery. Murray has specialized in the sale of boiler tubes since 1845 and can supply them straight or bent, upset, or swaged.

Other Murray products include carbon steel tubing and pipe; welding and screw type pipe and tube fittings; and stainless steel pipe and tubing.

WRITE FOR CURRENT
TUBE STOCK BULLETIN



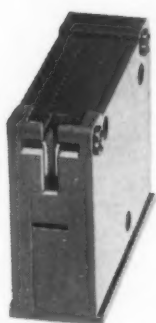
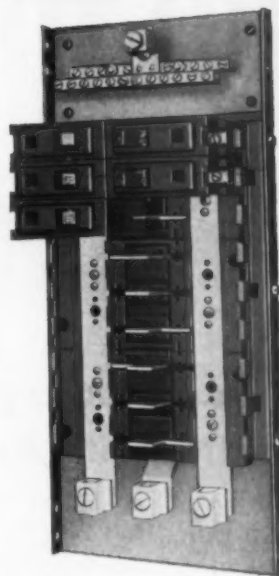
plug-in circuit breaker



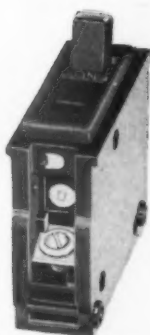
FROM COAST TO COAST

... Leading independent panelboard builders are now offering flexible, new I-T-E plug-in panelboard design

Panelboards are now reduced as much as 25% in size, through use of the new I-T-E design. New design provides from 12 up to 42 circuits, sequentially phased for single-phase three-wire 120/240 volts a-c or three-phase four-wire 120/208 volts a-c.



Plug-in pressure-type contacts enable EQP breakers to be clipped directly on bus stabs. Mounting is positive, safe.



Load terminals are securely mounted—easily accessible for quick connection of leads.



Three-position operating handle clearly indicates whether breaker is ON, TRIPPED, or OFF. Service can be restored in a hurry when breaker trips on overload.

Remember —

You don't have to compromise with quality to utilize the new, compact lighting panelboards and load centers now available. Specify I-T-E EQP circuit breakers—and I-T-E panelboard construction—throughout. Your local panelboard builder will gladly give you details.



MOLDED CASE CIRCUIT BREAKERS

I-T-E CIRCUIT BREAKER CO. • 19th and Hamilton Streets • Philadelphia 30, Pa.

Backstand Belts cut finishing time 70%

**5 minutes on a set-up wheel cut to
1½ minutes with Armour Backstand Belts**

Changing from set-up wheels to backstand belts saved 3 minutes 39 seconds in finishing forged paving breaker handles, reports a well-known company*. This operation formerly took 5 minutes 11 seconds. And this wasn't the only saving. Backstand belts outlast 4 to 5 set-up wheels; without dressing they remain flat and true. And due to their uniform grit, they give a better finish.

Belts are only one of the many forms of Armour coated abrasives. There are more than 30,000 different varieties in grit size, backing, etc. We have sheets, disc, rolls, tubes—and specialties to meet your specifications. Your industrial supply distributor will tell you about the Armour line. Call him today!

The complete story of the money-saving backstand belt method is covered in our free booklet offered below. Send the coupon for your copy now!



**We recommend
buying through
your industrial
distributor**



*Name of company available on request

MAIL THIS COUPON TODAY!

Armour and Company • North Benton Road • Alliance, O.
Please send me your free booklet, "Backstand Belt Polishing."

Name.....Title.....
Firm.....
Address.....
City.....Zone.....State.....
P

Air Reduction Sales Company, New York City, has appointed A. C. Brown, Jr. general sales manager. Mr. Brown, who formerly was regional manager for Air Reduction Sales, will move his



A. C. Brown, Jr.

office from Pittsburgh to the company's headquarters in New York City. He has been with the firm since 1935.

J. H. Keeney, administrative assistant in Pittsburgh, succeeds Mr. Brown as regional manager. J. H. Hart, Detroit district manager, succeeds Mr. Keeney, and R. A. Jamieson, assistant sales manager, Detroit, succeeds Mr. Hart.

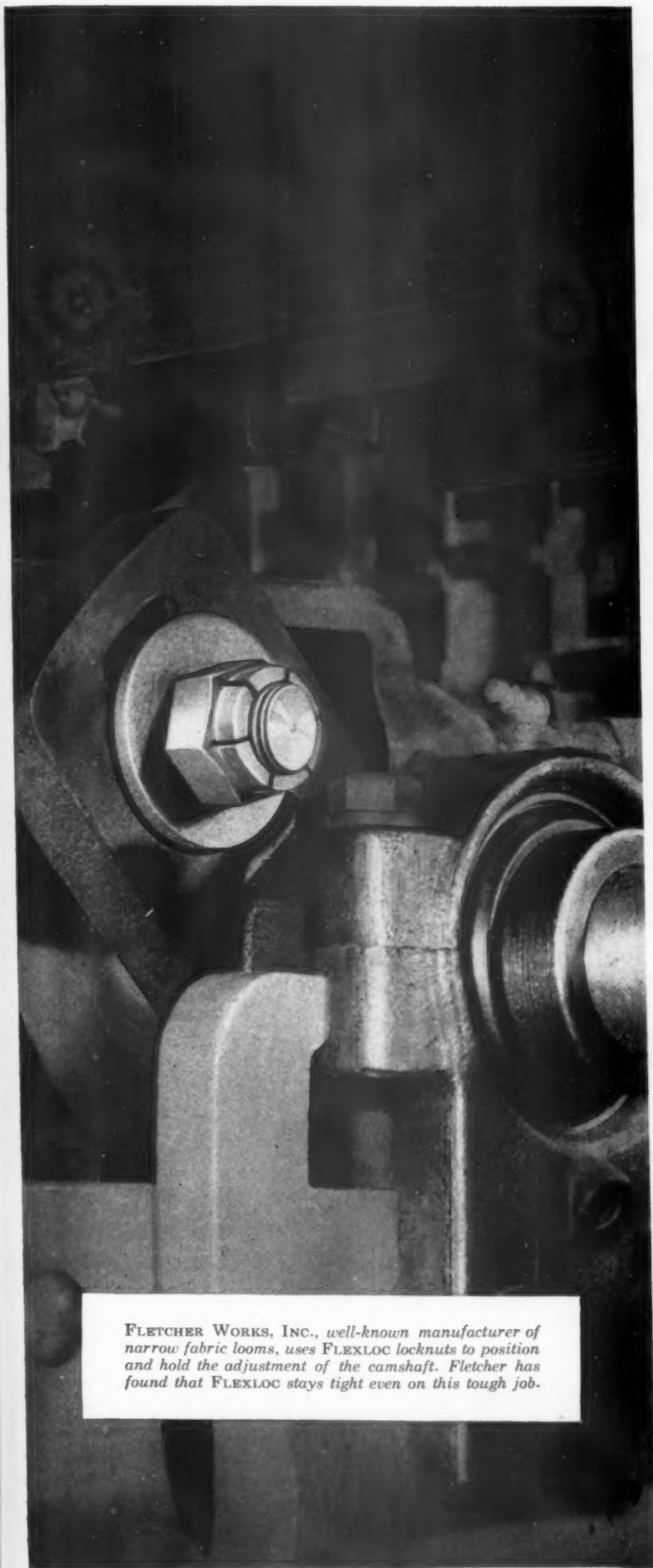
The Bristol Company, Waterbury, Conn., has appointed Harry E. Beane vice president of sales. Mr. Beane, who joined Bristol in 1920, was named



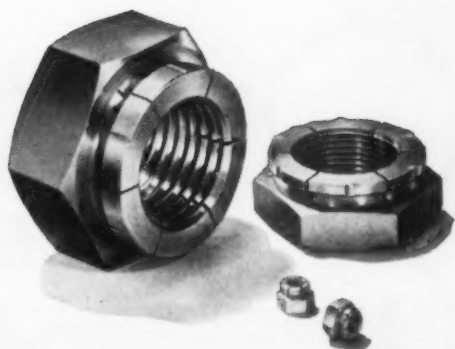
Harry E. Beane

general sales manager in 1947, the position he held until his recent appointment. He will continue to make his headquarters at the company's general offices in Waterbury.

Miller Electric Manufacturing Company, Appleton, Wis., has named Alexander McKenzie district sales manager for parts of Ohio, Pennsylvania and West Virginia. Mr. McKenzie has been in the welding and sales field since 1924 and has been associated with Consolidated Aircraft, Buffalo, N. Y., and Linde Air Products.



FLETCHER WORKS, INC., well-known manufacturer of narrow fabric looms, uses FLEXLOC locknuts to position and hold the adjustment of the camshaft. Fletcher has found that FLEXLOC stays tight even on this tough job.



How FLEXLOC locknuts reduce maintenance

FLEXLOCs reduce maintenance by staying where you put them. Once they are installed, you can forget them. Service and inspection periods can be stretched safely from days to weeks.

And FLEXLOCs eliminate complicated, time-consuming methods of locking threaded fasteners. They offer faster, simpler application, and safer, more dependable locking than plain nuts and lockwashers, castellated nuts and cotter pins, or nuts and jam nuts.

Use FLEXLOCs wherever you use an ordinary nut. These one piece, all metal locknuts—with nothing to assemble, come apart, lose or forget—won't work loose regardless of the vibration encountered. Yet they can be easily removed and used over and over again. FLEXLOCs are stop and lock nuts too. They don't have to seat to lock, and they stay put anywhere on a threaded member as soon as the locking threads are fully engaged.

You can get FLEXLOCs in a wide range of sizes in any quantity. Stocks are carried by leading industrial distributors everywhere. Write for literature and samples. SPS, Jenkintown 31, Pa.

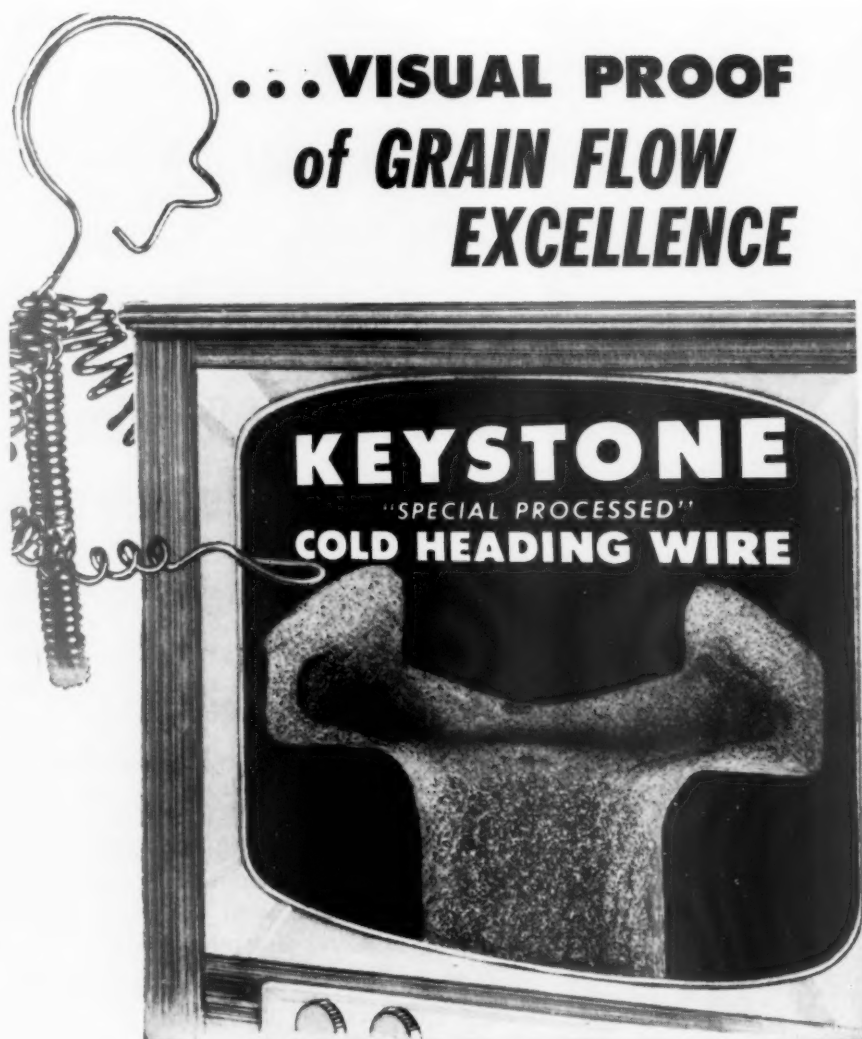
FLEXLOC

LOCKNUT DIVISION

SPS

JENKINTOWN PENNSYLVANIA

Our Fiftieth Year : A START FOR THE FUTURE



The above macrograph offers visual proof of the uniform grain flow characteristics in a recessed-head screw made from Keystone "Special Processed" Cold Heading Wire. The continuous, strength-giving flow lines indicate efficient cold heading which results in longer die life, increased production and a better finished product.

The following analysis of "special processed" wire is recommended for difficult cold heading.

C1006-C1012 for Clutch Heads
 C1006-C1022 for Phillips Heads
 C1108-C1109 for Phillips Head
 Wood Screws
 C1035-C1038 for Heat Treated
 Screws and Bolts

INDUSTRIAL WIRE SPECIALISTS

Keystone Steel & Wire Company
PEORIA 7, ILLINOIS



Herbert P. Dales has been appointed sales manager and Carl L. Adelman, assistant sales manager of the Coated Products Division of The Carborundum Company, Niagara Falls, N.Y. Mr. Dales was assistant manager of the Chicago sales district prior to his re-



Herbert P. Dales



Carl L. Adelman

cent promotion. Mr. Adelman, who has been with Carborundum since 1930, has sold coated abrasives exclusively for the past three years.

Other Carborundum sales personnel changes include the appointment of Russell P. Colosi as assistant to the Cleveland district sales manager. Charles J. Walter has been named office manager in the Cleveland district. Wilfred Robson has been transferred to the position of office manager in Los Angeles, and Joseph A. Marrone has been named assistant office manager in Chicago.

Ohio Brass Company, Mansfield, Ohio, has elected Louis J. Ott vice president and general sales manager. Mr. Ott,



Louis J. Ott

who worked in the factory during summer vacations, joined the company's advertising department in 1928, following his graduation from Amherst College. He was named general sales manager in 1949.

Millard S. Stotler has joined the staff of Eagle Manufacturing Company, Wellsburg, W. Va., to assist with advertising and merchandising of Eagle oilers and gasoline cans. He formerly was associated with an engraving firm.

*wherever you
need stainless steel
tubing...*

TRY TRENTWELD!

● Stock lines in food, paper, and chemical plants; heat exchanger units in processing industries; cooling coils in breweries, beverage industry, dairies and dairy equipment...throughout all industry, wherever there's a stainless or high alloy tubing application, there you'll find TRENTWELD.

And it's to be expected! TRENTWELD is made in a tube mill by tube engineers who roll and weld stainless and high alloy tubing exclusively. Then too, TRENTWELD is available in a full range of sizes — $\frac{1}{8}$ " to 40" in diameter. This, coupled with Trent's convenient mid-continent location, means prompt delivery of what you want ...when you want it. If yours is a stainless or high alloy tubing requirement: Call on us.

TRENTWELD

STAINLESS STEEL TUBING

TRENT TUBE COMPANY, GENERAL SALES OFFICES, EAST TROY, WISCONSIN

(Subsidiary of Crucible Steel Company of America)

APRIL, 1953

Please mention PURCHASING Magazine when writing to advertisers.

309



BLUE DEVIL

SOCKET SCREW PRODUCTS



Cap Screw

finest

Whether your application is delicate precision apparatus or huge rugged machine tools, you'll find no finer socket screws on the market than Blue Devil! Write today for the complete Triple-Ess Catalog . . . or see your distributor.

Stripper Bolt



Flat Head Cap Screw



Pipe Plug



SAFETY SOCKET SCREW COMPANY

6502 AVONDALE AVENUE • CHICAGO 31, ILLINOIS

Set Screw

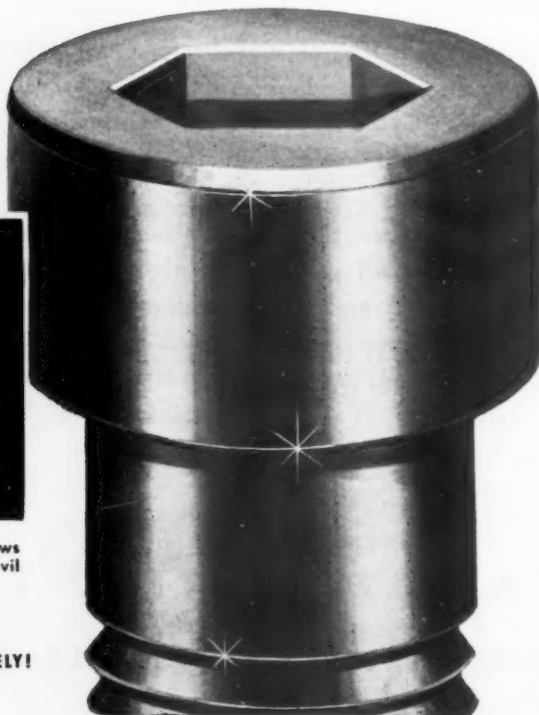


SOLD THROUGH AUTHORIZED INDUSTRIAL DISTRIBUTORS



Actual cross-section photo shows structural continuity of Blue Devil cap screw from body to head.

SOCKET SCREWS EXCLUSIVELY!



Heppenstall Company, Pittsburgh, Pa., has appointed Lawrence R. Malm district sales representative at Chicago, with headquarters at 208 S. LaSalle Street. He succeeds J. C. Patton, Jr., who resigned.

Oxy-Catalyst, Inc., Wayne, Pa., has appointed Dravo Corporation, Pittsburgh, Pa., as sales and engineering representative for its Oxycat, an air pollution-control and heat-recovery device.

Bailey Meter Company Cleveland, Ohio, has appointed G. M. Wallace assistant sales manager with headquarters in Cleveland. He will supervise the sale of meters and control equipment to the process industries.

Honan-Crane Corporation, Lebanon, Ind., has appointed E. A. Warren to its sales engineering staff. Mr. Warren, who formerly was with Bowser, Inc., will cover southern Indiana, southeast Illinois and northwest Kentucky, with headquarters in Princeton, Ind.

The American Buff Company, Chicago, Ill., has announced two new appointments to its sales staff. Albert J. Hebsacker has been assigned to cover the Detroit area, and part of Ohio, with his headquarters in Detroit. Fred Hoffman has taken over part of the Indiana and Kentucky territory with Indianapolis as his headquarters.

J. W. Elsworth, Jr. has joined the sales staff of the **R. M. Hollingshead Corporation's Private Brand Division**, Camden, N. J. Mr. Elsworth will specialize in oil company operations for Hollingshead.

Harold J. Buzick has joined **Porter Muffler Mfg. Company, Inc.**, Los Angeles, Calif., as sales manager. He will direct stepped-up sales promotion activities for the company. Mr. Buzick was formerly buyer with Sears Roebuck & Company, and before that was with Ford Motor Company and General Motors Corporation.

Stryco Manufacturing Company, San Francisco, Calif., has been appointed to represent Ohio Tramrail Systems in the northern half of California and Nevada. W. Burbeck Johnson, chief engineer of Stryco, will serve material handling accounts in the territory.

George C. Brown, formerly sales manager of the **Fibron Division, Irvington Varnish and Insulator Company**, Irvington, N. J., has been promoted to vice president of the company and general manager of the Fibron Division. Bernard M. Hoey has been appointed sales manager of the Fibron Division.



CLEVELAND CONTAINERS

- ... Save time in packing many kinds and quantities of items ready for assembly.
- ... Simplify assembly by having available spare parts which need frequent replacement.
- ... Protect individual finished items such as spark plugs, precision instruments, valves, gauges, bearings, etc., in storage and in transit.

Cleveland Containers illustrated above are especially suitable for the following purposes:

METAL END TELESCOPE CANS and **CURLED AND DISC END CONTAINERS** for drills, small tools, instruments and various other items wholly or partially fabricated.

LINERS

V.P.I. (Vapor Phase Inhibitor) and other new type liners are available, affording years of protection from rust and corrosion without need of coating products with oil, grease or wax.

Cleveland Containers with barrier liners meet government specifications, and are now available for industrial use.

★ ★ ★

See our Exhibit #515
at the
AMA Nat'l Packaging Exposition
April 20-23, at Chicago

UNIT PACK for numerous kinds of finished parts.

METAL END SCREW CAP for long time storage and shipping.

FLAT FIBRE CONTAINER for small or fragile parts.

Write for complete information and samples.

The **CLEVELAND CONTAINER Co.**

6201 BARBERTON AVE. CLEVELAND 2, OHIO

• All-Fibre Cans • Combination Metal and Paper Cans
• Spirally Wound Tubes and Cores for all Purposes

PLANTS AND SALES OFFICES: Cleveland, Detroit, Chicago, Plymouth, Wisc.,
Jamesburg, N. J., Ogdensburg, N. Y. • ABRASIVE DIVISION at Cleveland
SALES OFFICES: Grand Central Terminal Bldg., New York City; Washington
Gas Light Bldg., Washington, D. C.; West Hartford, Conn.; Rochester, N. Y.
Cleveland Container Canada, Ltd., Prescott, Ontario • Offices in Toronto and Montreal



HELD IN QUARANTINE

**... and not released
until proved fit!**

That's the fate of all PERKINS precision, custom-made GEARS prior to shipment. The folks in our inspection department — a section of which is shown — may be a suspicious lot (never mind what some other people in our plant call them), but when they certify a gear to be sound and "as specified" you can bet your last bottom dollar that the end-product of which they ultimately become an integral part, will be a better product!

NOTE 1: A new product is the Perkins Precision Spring Coiler. This coiler (patent applied for) turns out precision springs — any type, shape, size, from wire sizes .005 to .125.

2: Another new product — the Perkins "Bendit 15" — a patented metal forming machine bends and shapes sheets, rods; strips tubing into innumerable complex as well as simple forms that would be difficult or impossible to make by other means. Eliminates need for expensive tools or specialized skills. Ht. 47", net wt. 200 lbs. Write today for descriptive catalogs, prices etc.



PERKINS MAKES:

Helical Gears
Bevel Gears
Sprockets
Ratchets
Worm Gears
Spiral Gears
Spur Gears with
shaved or ground teeth
Ground Thread Worms

**PERKINS MACHINE
& GEAR COMPANY**
WEST SPRINGFIELD, MASSACHUSETTS

Arrowhead Rubber Company, Downey, Calif., has appointed Glenn E. Hilderbrand midwestern field engineer. He will maintain headquarters at 12 N. Third Street, Columbus, Ohio.

H. H. Buggie & Company, Toledo, Ohio, has appointed Walter E. Bornemann as its Mississippi-Louisiana representative. Mr. Bornemann formerly worked for Bell Laboratories in New York City.

The H. F. Black Equipment Company, Cleveland distributor for the Ellwell-Parker Electric Company, has announced the appointment of John R. Hogan as a sales agent for Northeastern Ohio and Erie, Pa. Mr. Hogan has been active in industrial truck engineering circles since 1937.

Bonney Forge & Tool Works, Allentown, Pa., has appointed Thomas G. Judd director of advertising and merchandising. Mr. Judd, who for four years owned and published a weekly newspaper in Mt. Pleasant, Utah, formerly was advertising manager of Thermoid Company, Trenton, N. J.

Whirlpool Corporation, St. Joseph, Mich., has appointed David J. Herman manager of utility relations and Paul M. Werth regional sales manager. For the past 25 years Mr. Herman has served in various capacities for Northern Indiana Public Service Company. Prior to joining Whirlpool, Mr. Werth was a regional sales manager for A. O. Smith Corporation.

Reynolds Metals Company, Louisville, Ky., has appointed Wharton L. Donaldson manager of packaging sales for the company's central region. Mr. Donaldson, who will make his headquarters in Chicago, Ill., was transferred from the firm's general sales office where he supervised national promotion of packaging, primarily to the brewing, confectionery, textile and cleanser markets.

John J. Doyle and **James L. Brown** have been named to newly-created sales posts in the **Westinghouse Electronic Tube Division**. Mr. Doyle, who has been with the company 25 years, assumes the new post of manager of renewal tube sales, and Mr. Brown, with Westinghouse 16 years, becomes manager of equipment tube sales.

Speco, Inc., Cleveland, Ohio, has announced the appointment of Charles R. Voracek as director of sales promotion and assistant sales manager for its maintenance products division. He was formerly affiliated with the paint research division of Patterson-Sargent Company and the B. F. Goodrich Company.

U. S. DRILL HEAD COMPANY SAYS . . .

HEAT TREATING ELIMINATED

• REJECTIONS REDUCED

• WEARABILITY INCREASED AND
COSTS CUT 50%

WITH
STRESSPROOF®
SEVERELY COLD-WORKED, FURNACE-TREATED
STEEL BARS

• Spindles for these multiple drill-heads must be straight. Formerly heat-treated, straightening was a difficult, costly job, and rejections were high.

Now produced from STRESSPROOF, heat-treating, with its attendant straightening problem, is eliminated; machinability is increased 25%; wearing properties have been improved; and costs reduced 50%.

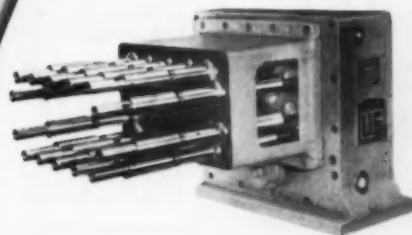
STRESSPROOF makes a better part at a lower cost.

STRESSPROOF's value to manufacturers like U.S. Drill Head stems from its unique combination of four qualities in the bar: (1) Strength, (2) Wearability, (3) Machinability, and (4) Minimum Warpage. Yet STRESSPROOF costs less than other quality cold-finished steel bars. It comes in cold-drawn or ground and polished finish.



La Salle STEEL CO.

Manufacturers of the Most Complete
Line of Carbon and Alloy Cold-Finished
and Ground and Polished Steel Bars in America.



Multiple spindle, made by U.S. Drill Head Company, Cincinnati, Ohio, uses spindles made from STRESSPROOF.

SEND FOR . . .
Free Engineering Bulletin
"New Economies in the Use
of Steel Bars"



La Salle Steel Co.
1432 150th Street
Hammond, Indiana

Please send me your STRESSPROOF Bulletin.

Name _____
Title _____
Company _____
Address _____
City _____ Zone _____ State _____



MALLEABLE IRON CASTINGS

that you can depend upon!

The right connection—for the malleable iron parts you need—can be a source of satisfaction to you.

Many, many leading makers of durable goods use Moline Iron Works Malleable Iron Castings to uphold the quality of their products.

Good service, quality control and reasonable prices are three reasons why your connection with Moline Iron Works can be both a pleasant and profitable one. We invite your specifications for quotation.

WE SHIP QUICK!
Phone 4-5676 for Service

The parts shown here are representative of our production for automotive, farm implement, appliance and railroad customers.

MOLINE IRON WORKS
Moline, Illinois, U. S. A.



DeWalt Inc., Lancaster, Pa., has appointed Thomas E. Berry to cover the New York territory. Prior to joining DeWalt, Mr. Berry was regional sales manager for a welding materials firm and did sales promotion work for the Scoville Manufacturing Company, Waterbury, Conn.

Oliver United Filters Incorporated, New York, Chicago, and Oakland, Calif., has announced an arrangement for local sales and engineering representation in Southern California, Arizona, Nevada and New Mexico. R. M. Stampely has been assigned to this territory with offices in the Statler Building, 900 Wilshire Blvd., Los Angeles.

Bready Tractor and Implement Company, Solon, Ohio, has appointed Earl K. Loverud to the post of general sales manager. Mr. Loverud will supervise the activities of Bready's sales force and direct the distribution of the company's products.

Westinghouse Electric Corporation, Pittsburgh, Pa., has opened a new branch office at Atlanta, Ga., to serve its Southeastern District. Thomas Fuller, Jr. is branch manager. M. A. Land has been named sales supervisor and S. M. Morton is office manager. T. J. Woth is branch engineering manager and G. W. Alexander is branch service manager. J. J. Hill has been appointed manager of the Chattanooga, Tenn., office, replacing Mr. Fuller. E. P. Athens heads the Jacksonville, Fla., office. A new office was established at Greenville, S. C., with J. H. Reeves as manager.

Taylor-Wharton Iron and Steel Company, Cincinnati, Ohio, has appointed Charles P. Moeller general sales manager of its Trackwork Division. Mr. Moeller will have full responsibility for an extended sales program in the east and south.

Rivett Lathe & Grinder, Inc., Boston, Mass., has appointed Genesee Machine Builders, Inc., Rochester, N. Y., as representative in the Rochester area for the Rivett line of air and hydraulic valves and cylinders and power units.

Donald W. Tait has been appointed manager of sales promotion of the equipment sales division of Raytheon Manufacturing Company, Waltham, Mass. He formerly was associated with the Chase Brass and Copper Company, Waterbury, Conn., and the Perlite division of Great Lakes Carbon Corporation, New York City.

Bay State has appointed S. Gordon Saunders district manager of its Detroit, Mich., office and warehouse, succeeding Mr. Auken. He formerly was on the staff of K. T. Keller, president of Chrysler Corporation, as general manager of the Cycleweld division.

FREE Catalog BRONZE PLAQUES



for

HONOR ROLLS

MEMORIALS • AWARDS • TESTIMONIALS

COMMEMORATIVE PLAQUES

Every organization should keep on hand this big 52-page catalog, illustrating over 150 suggestions for handsome, imperishable, solid bronze plaques. Sent free — ask for Catalog A. Write Dept. 34.

TROPHIES and MEDALS, TOO!



Special catalog illustrates 900 cups, trophies, medals, etc. suitable for presentation as prizes and awards in all kinds of contests, or for testimonial purposes. Sent free — ask for Catalog B.



INTERNATIONAL BRONZE TABLET CO., INC. 150 WEST 27th ST. NEW YORK 11, N. Y.

COMING TO CLEVELAND

NEW
VISIT THE HOLLENDEN...
COMPLETELY REDECORATED!

- ★ 1000 ROOMS WITH BATH
- ★ RADIO IN EVERY ROOM
- ★ SIX FINE RESTAURANTS
- ★ CENTRAL DOWNTOWN LOCATION
- ★ GARAGE ATTACHED

HOTEL HOLLENDEN

Robert P. Joyce, General Manager



Home of the
famous
Vogue Room

TAYLOR Commercial Grade Vulcanized Fibre

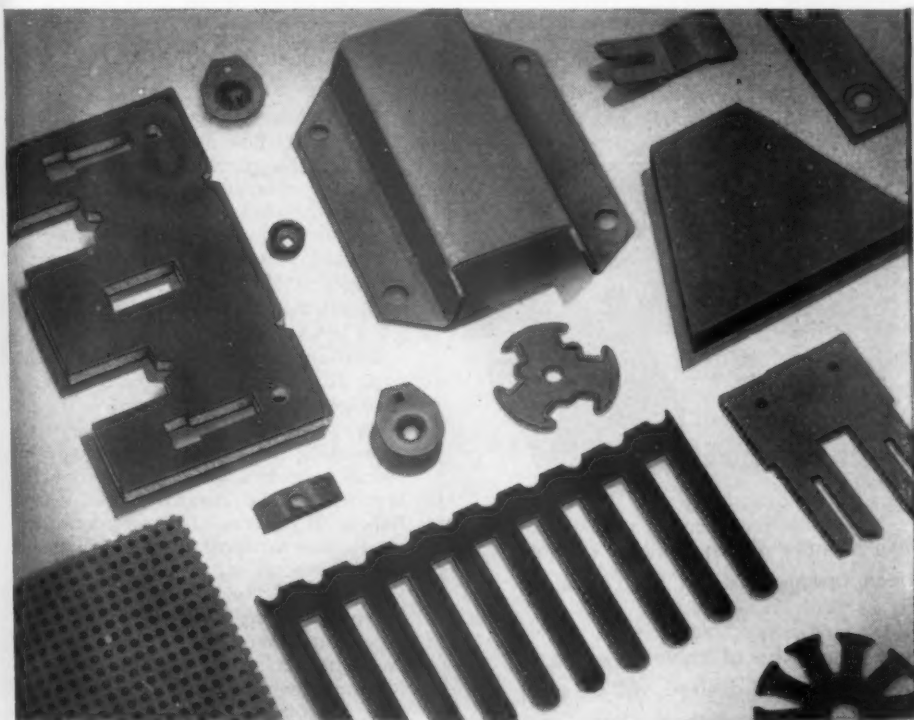
is tough, lightweight, abrasion resistant . . .
excellent for bending, punching, stamping and forming . . .
resistant to organic solvents, oil and gasoline . . .
has excellent electrical characteristics.

Want to make something of it?

Make it into insulating plates, upset washers, arc barriers, terminal blocks, switch and appliance insulation, cases, face plates for golf clubs . . . or any other electrical or mechanical component that can benefit from the unique properties of this versatile material.

Make it in red, gray, black, or special colors.

Make it from sheets or rolls with these specifications:



SPECIFICATIONS

Thickness Range:
.005" to 1"

Finish:
Pressed and calendered

Punching:
To 3/16" thick

Sheet Size:
56" x 90"

Roll Width:
56" for thicknesses of
.005" through .060".
Coils to 3/16" for thick-
nesses of .005" through
.090".

Make it from turned rods. Diameters from 1/8" to 1" with ground or buffed finish.

Make it easy for yourself when you're buying vulcanized fibre. Call your Taylor engineer . . . he will be glad to work with you . . . help select the correct grades to fit your needs
—Commercial, Bone, Super White, Abrasive and Built-up.
Also ask him for samples of Taylor Laminated Plastics . . .
Phenol, Silicone and Melamine Laminates . . .
suited for a variety of your product requirements.

Let us make it for you in our Fabricated Parts Division. We are equipped to turn out parts to your exact specifications . . . at the right price . . . with deliveries to match your production schedules.

Taylor Fibre Company, Norristown, Pennsylvania—La Verne, Calif.

TAYLOR
Laminated Plastics
Vulcanized Fibre

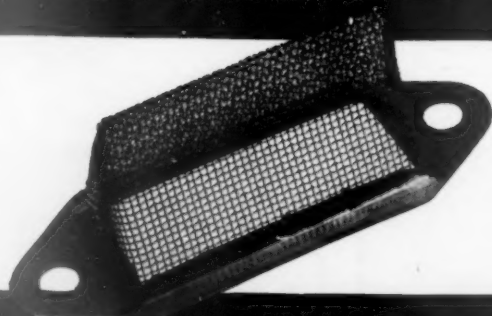
Please mention **PURCHASING Magazine** when writing to advertisers.

NEWARK

Fabricated WIRE CLOTH PARTS



Available — a well-equipped plant with highly experienced fabricators.



Available — mesh cloth and space cloth made in our own plant.

All under one roof



Do you require parts made with one or more pieces of mesh cloth or space cloth — anything from 4 inch openings down to 325 mesh (105,625 holes/sq. in.)?

Our experienced fabricating service should be of value. We are in position to handle volume order business and, if desired, will be glad to help in designing the part requiring the metallic cloth. We know how to insert and fasten metallic cloth to get best results. We carry many standard sizes of wire cloth in stock. We have ample loom facilities to weave special cloths if necessary. We can handle any wire of any malleable metal.

This fabricated parts division of our business has grown by leaps and bounds. We have had many repeat orders. It could be due to the quality of wire cloth used and the care with which this cloth is assembled into the parts being fabricated.

Ask for General Catalog "D"

NEWARK
for **ACCURACY**

Newark Wire Cloth

COMPANY

351 VERONA AVENUE • NEWARK 4, NEW JERSEY

Philadelphia 3, Penna. San Francisco, Calif. Chicago, Ill. New Orleans, La. Los Angeles, Calif. Houston, Texas
1311 Widener Bldg. 3100 19th St. 20 N. Wacker Dr. 520 Maritime Bldg. 1400 So. Alameda St. P. O. Box 1970

Eclipse Fuel Engineering Company, 1002 Buchanan Street, Rockford, Ill., has appointed General Combustion Company as its new district representative covering the states of Alabama and Northwestern Florida. Frank Matzek and Charles Herron, with offices at 339 Brown Marx Building, Birmingham 3, Ala., will handle sales and service of the Eclipse line.

Dan Lewis, Jr., field sales representative of **Goodyear Tire & Rubber Company's** chemical division, Akron, Ohio, has been assigned as special representative at the division's newly established district office in Dallas, Texas. He will provide service and technical information on Goodyear chemical division products in Arkansas, Louisiana, Oklahoma and Texas. Prior to joining Goodyear in August, 1952, Mr. Lewis was associated with Shell Chemical Corporation and California Research Corporation.

The Baker-Raulang Company, Cleveland, Ohio, has appointed Merritt S. Stevenson as manager of transportation sales. Mr. Stevenson will direct Baker sales activities in the rail, air and highway transportation fields, and will work with shippers in the development of efficient freight and baggage handling techniques.

Fairbanks, Morse & Company, Chicago, Ill., has named William B. Morse manager of the Detroit, Mich. sales and service branch of the company, succeeding E. J. Hay, deceased. Mr. Morse, who is a great grandson of the founder of the company and son of Robert H. Morse, Jr., president, formerly was assistant to the manager of the Detroit office.

Synthane Corporation, Oaks, Pa., has appointed Oliver L. Smith to its New York district sales staff to service industrial accounts in eastern New York State and part of Manhattan.

The Western Express Company, Cleveland, Ohio, has appointed William F. Smith as assistant to J. W. DeVenne, vice president and general manager. Mr. Smith, a former Cleveland Safety Director and F.B.I. man, will apply his specialized experience in traffic, transportation and management in the administration of the firm's current expansion program.

The Girdler Corporation's Votator division has announced the appointment of Wallace A. Gray to its New York sales staff. Mr. Gray joined Girdler in 1944 and in 1950 was assigned to the field service and engineering staff.

Alexander B. Freeman has been appointed vice president of **The American Brass Company**, American Metal Hose Branch, Waterbury, Conn. Mr. Freeman joined American Brass in 1912 as a stock clerk and in 1950 was named general manager.

*Bridging
time and
track with*

*"Century"
asbestos
corrugated*

Inter-plant bridge of the Trumbull Electric Department of the General Electric Co. in Plainville, Conn. Sidewalls of bridge and the building on the right constructed of "Century" Asbestos Corrugated, and applied by Hampden Cornice Works Inc., Springfield, Mass. Supervisor of Construction: General Electric Realty Corp., Schenectady, N.Y. Engineer and Architect: Lockwood Greene Engineers Inc., New York, N.Y. General Contractor: The Gellatly Construction Co., Bridgeport, Conn.

"Century" Asbestos Corrugated makes an ideal siding for this new inter-plant bridge and building because of its outstanding durability and freedom from maintenance. After many years this long-lived siding will still be sound, serviceable, and weather-tight.

If that's the kind of dependable siding and roofing you are seeking, you ought to know more of the many advantages in using "Century" Asbestos Corrugated. Here are a few facts about this versatile, economical material:

It is made in large, strong sheets from portland cement and asbestos fiber—therefore *cannot* burn, rot or rust. It is impervious to rodents and termites. It is completely, permanently weatherproof. Although it never needs paint, it will take decorative colors well.

"Century" Asbestos Corrugated has proved itself to be a maintenance-free and long-lasting building material—well worth your close consideration. We shall gladly send you complete information on request.

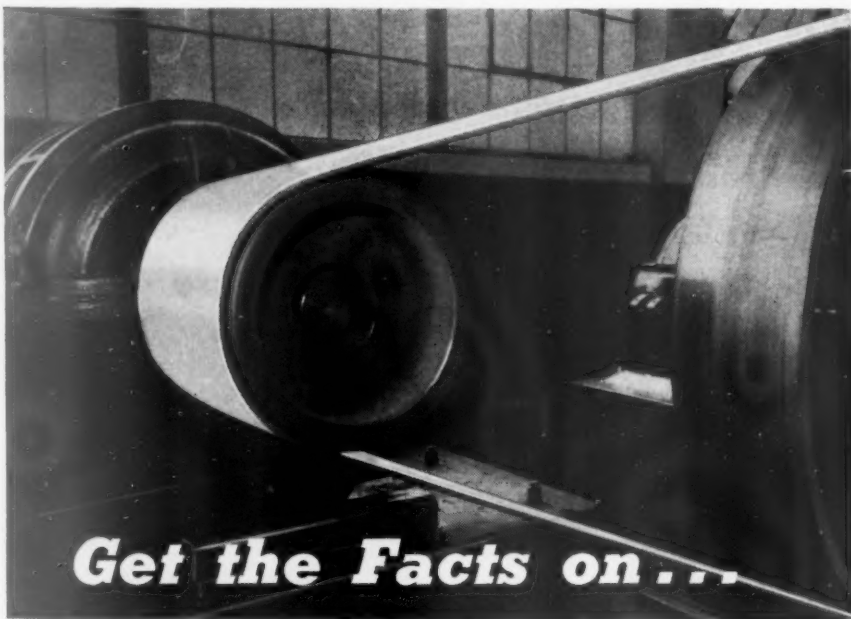
Nature made Asbestos...
Keasbey & Mattison has made it
serve mankind since 1873.



KEASBEY & MATTISON
COMPANY • AMBLER • PENNSYLVANIA

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Before You Buy Transmission Belting



Get the Facts on...

Tannate®

It is unequalled for its strong, glove-like grip. Unequalled for its stamina and shock-resisting qualities. Unequalled for its long service and low maintenance. It has the ability to deliver a smooth, uniform flow of power.

Behind the long and successful history of Tannate Belting is Rhoads unmatched experience — 250 years. The specialized knowledge of producing superior industrial leathers can be put to work for you. Likewise, every modern facility at our disposal — the research and chemical laboratories, the highly qualified engineers, chemists, tanners and belt-men. With "rolled-up sleeves" these men help give you the best in transmission belting as well as the best service.

Our sales engineers will gladly confer with you, make preliminary drive surveys, design a drive to meet your particular needs . . . even train one of your men in the proper installation and maintenance of Tannate Belting.

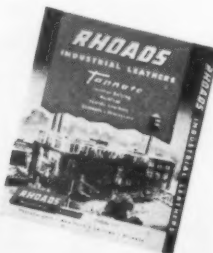
The next time a Rhoads sales engineer calls upon you, listen to the facts — they'll help you. Or, if you prefer immediate data, write for descriptive literature to

J. E. Rhoads & Sons, 35 N. Sixth St., Philadelphia 6, Pa.

Tannate®

Leather Belting is "custom-engineered" from raw hide to finished product. Its unusual characteristics, not found in any other belt, are the results of special tanning processes. Consequently, Tannate is strong and resilient, adaptable to a variety of drive conditions where ordinary belting is not applicable.

Write for Rhoads complete data file on belting. It contains many facts about Tannate.



RHODS

INDUSTRIAL LEATHERS

PHILADELPHIA • NEW YORK • CHICAGO • ATLANTA

Adamas Carbide Corporation, Harrison, N. J., has appointed Clyde Smith as its sales representative in Southern Ohio. He formerly was associated with Firth-Sterling.

Chase Bag Company, Chicago, Ill., has appointed Robert N. Conners executive vice president. He was vice president and general sales manager and a member of the board of directors since 1938. William N. Brock, assistant general sales manager for Chase since 1945, has been named general sales manager.

May-Fran Engineering, Inc., Cleveland, Ohio, has appointed Walter A. Stuhr regional sales engineer in charge of the company's new midwestern office at 53 West Jackson Blvd., Chicago, Ill. Mr. Stuhr will represent May-Fran's line of materials handling equipment and mechanized scrap handling systems throughout the central area.

Electro Metallurgical Company, a division of Union Carbide and Carbon Corporation, New York City, has appointed S. L. Jackson district manager of its Los Angeles office and R. L. Reed district manager of its Detroit office.

The Hammel-Dahl Company, Providence, R. I., has announced the opening of two California offices to handle the sales and service of its automatic control equipment. One office is at 3715 Santa Fe Avenue, Los Angeles, and the other at 607 Market Street, San Francisco. Both offices are under the supervision of Thomas H. Ponton.

Wagner Brothers, Inc., Detroit, Mich., have announced the appointment of Bert Hawhee as sales representative for their Indiana territory. Mr. Hawhee, who will handle the entire Wagner line of plating and polishing supplies and equipment, will locate in the newly established office at 3016 North Illinois Street, Indianapolis.

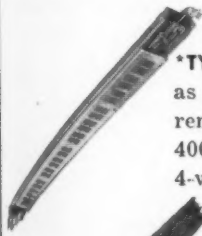
Adamas Carbide Corporation, Harrison, N. J., has announced the appointment of Tool Specialists, 891 Prospect Avenue, Westbury, Long Island, N. Y., as its metropolitan sales representative. Adamas has also appointed Galvin Machinery Sales, 561 Glenwood Avenue, Buffalo 8, N. Y., as its Buffalo sales representative.

Calumet & Hecla, Inc., Calumet, Mich., has leased quarters for its executive offices in the People's Gas Building, 122 South Michigan Avenue, Chicago, Ill. The company will take occupancy on May 1. Except for metal sales and procurement, which will continue to operate from the company's New York office, company-wide executive responsibilities will be headquartered in the new Chicago offices.


present and future power requirements

Quick Facts


About 4 types of Flex-A-Power which, in combination, will meet almost any low voltage distribution requirement.



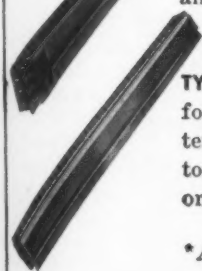
***TYPE LVD.** For high capacity feeder applications, or as a riser in multi-story buildings carrying high currents over long distances, with low voltage drop. 600-4000 ampere ratings, 2-, 3- and 4-pole and 3-phase, 4-wire solid neutral, 600 volts.



***TYPE FVK.** Operates like a panelboard running the length of the plant. Power outlets at one-foot intervals, tapped by Flex-A-Plug fusible switches or breakers. 225-1000 amperes, 2- and 3-pole and 3-phase, 4-wire solid neutral, 600 volts.



TYPE TK. A heavy-duty trolley busway, brings *mobile* power to production lines, hoists and cranes. 100, 200 and 400 amperes, 2- and 3-pole, 600 volts.



TYPE LTG. A plug-in and trolley busway, unmatched for lighting systems. Individual lights or entire systems can be rearranged with plug-in ease. Portable tools enlarge their usefulness by means of LTG plugs or trolleys. 50-amperes, 2-, 3- and 4-pole, 300 volts.

**Aluminum busbars optional.*

OTHER RECENT

FLEX-A-POWER INSTALLATIONS

SHAMROCK HOTEL,
Houston, Texas

UNITED NATIONS BUILDING
SEALED POWER CORPORATION,
Rochester, Indiana

GIMBEL'S MILWAUKEE STORE
HOTEL ROOSEVELT,
New Orleans, Louisiana

UNIVERSITY OF WASHINGTON
MEDICAL SCHOOL,
Seattle, Washington

REMINGTON RAND
LABORATORY,
Norwalk, Connecticut

STANDARD KNAPP DIVISION,
Emhart Mfg. Company,
Portland, Connecticut

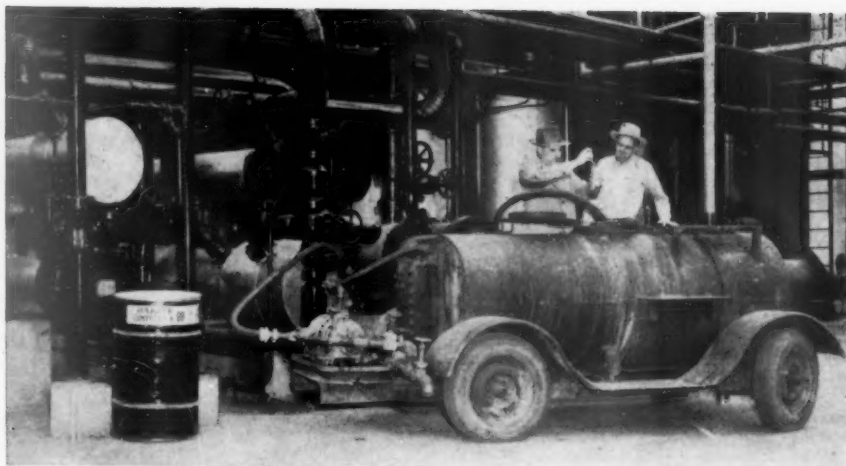
CANDLER BUILDING,
Atlanta, Georgia

HARTFORD FIRE INSURANCE CO.,
Hartford, Connecticut

CITY NATIONAL BANK,
Houston, Texas

TRUMBULL T ELECTRIC

DEPARTMENT OF GENERAL ELECTRIC COMPANY
PLAINVILLE, CONN.



Dividends on the barrel head

YOU GET MORE than just a good detergent when you buy a barrel of Oakite cleaner. You get returns on your investment — a cleaning program that sets up your facilities, gets the work under way, and keeps checking to see that you get everything you pay for.

Here's a case in point: This Southwestern refinery bought the barrel of Oakite Compound No. 88 pictured above. They got the skillfully blended acid-detergent, which did a bang-up job of cleaning their coolers and condensers.

They also got, free of charge, the drawings from which they built the portable cleaning unit; the solution-testing kit in the hands of the Oakite Representative; and the time, knowledge, and experience of the Oakite man himself.

They got complete satisfaction: they've been Oakite users for over seventeen years!

That's the kind of service you get from Oakite: Designed-for-the-job materials. Expert advice and help in setting up facilities. Instruments for controlling solution strength. The on-the-job experience of over two hundred cleaning specialists, backed up by Oakite's research and service laboratories.

There's an Oakite man in your neighborhood. Call him today. Or write Oakite Products, Inc., 54 Rector St., New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
TRADE MARK REG. U. S. PAT. OFF.
 MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. & Canada

Samuel K. Hostetter, Jr. has been named sales manager of the Crocker-Wheeler Division of **Elliott Company**, Ampere, N. J. For the past 10 years Mr. Hostetter has served as manager of the Washington office where he supervised Elliott sales activities in Washington and in an extensive surrounding territory, in addition to covering the many important federal agency activities.

Allen P. Vining has been appointed general sales manager of **Bond Crown and Cork Company**, a wholly-owned subsidiary of Continental Can Company. Mr. Vining will make his headquarters at the Wilmington, Del. offices of Bond. Ridgley G. Greathouse will succeed Mr. Vining in his former position of Pacific Coast sales manager.

Rodney Hunt Machine Company, Orange, Mass., has announced the appointment of Jack W. Rembe as sales manager. For the past five years he was export manager of the firm. Langdon M. Phillips, previously field sales manager, has been named to the post of assistant sales manager for Hunt.

Robert W. Saxton has been appointed sales manager of the Contract Division of **Kold-Hold Manufacturing Company**, Lansing, Mich. For the past six years Mr. Saxton was district sales supervisor for the U. S. Gypsum Company.

Pyramid Instrument Company, Inc., Lynbrook, N. Y., has appointed Bernard M. Egrin to the newly created post of regional sales manager. He formerly was with Pyrene Mfg. Company, Carrier Engineering Corporation, and Julius Dierckx Distributors of New York.

O. B. Wilson has been named industrial instruments sales manager for the **Industrial Division of Minneapolis-Honeywell Regulator Company**, Philadelphia, Pa. He joined the company in 1923 and last year was named field sales manager of the Industrial Division.

The Pittsburgh Screw and Bolt Corporation, Pittsburgh, Pa., has appointed Robert B. Algie assistant vice president—sales. He formerly was assistant manager of sales of Jones and Laughlin Steel Corporation, and recently was associated with Forbes Steel Corporation.

Harlan L. Reyeroft, Jr. has been named manager of the new Industrial Movement Sales Division of **The Sessions Clock Company**, Forestville, Conn. He will be responsible for the sales and application of a new line of industrial motors, timing movements and switch timers.

A. Milne & Company, New York City, has added a new warehouse at 753 Chestnut Street, N.W., Atlanta, Ga., for its distribution of solid and hollow tool steels.

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ASING

TOUGH, highly uniform and economical to use, 20th Century *Normalized shot and grit is right on the mark in hundreds of foundries and metal-working plants. Close laboratory control and modern production methods assure the high quality of this metallic abrasive. It lasts three times longer than conventional shot and grit.

One of the world's largest producers of quality shot, grit and powder—Hard Iron—Normalized—Cut Wire.

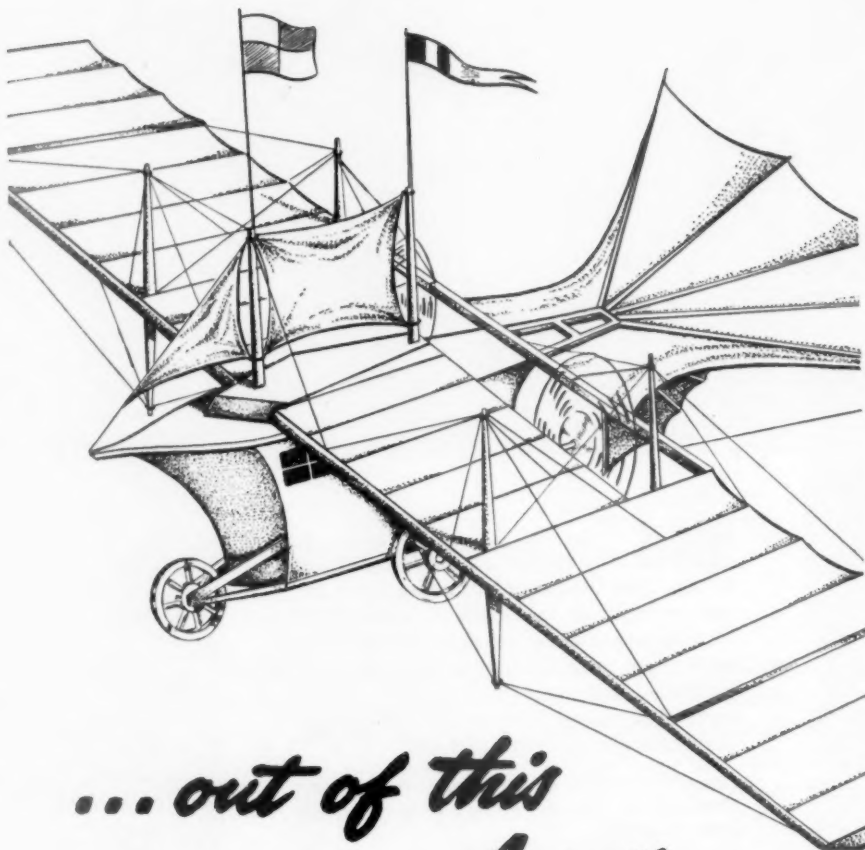
Write for our new catalog.

**Copyrighted trade name.*

THE CLEVELAND **Metal
Abrasive** CO.

811 East 67th Street, Cleveland 8, Ohio
Howell Works: Howell, Michigan

20th
Century
*the
persuasive
abrasive*



*... out of this
came Aviation*

... an industry that created the need
for suppliers with the manufacturing facilities
and craftsmen to produce consistent
quality precision parts and assemblies. The
Indiana Gear Works has been serving
the aviation industry since 1933—accumulating
twenty years of precision experience
that enables I.G.W. to match design
intelligence with creative production.



Behind these doors is a modern plant with the finest precision production facilities and skilled craftsmen guided by modern methods and procedures. This is a plant where quality is more than a word—it's a method of manufacturing.



INDIANA GEAR

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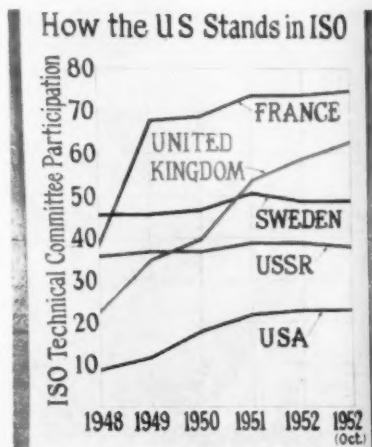
Hack Saw Blade Sizes Meet Industrial Standards

A schedule of hack saw blade sizes to meet industrial standards recently adopted by the Hack Saw Manufacturers Association of America, Inc. has been announced by Victor Saw Works. The new schedule is designed to streamline inventory, speed turnover, and, at the same time, provide an efficient blade for every metal cutting need.

In establishing the new schedule a definite ratio between width and thickness was followed. Blades to 30" in length have a width twenty times their thickness. The schedule has been adopted by U. S., Canadian and British manufacturers, and it is expected that manufacturers in France, Germany and Sweden will soon follow suit. Further information can be had by writing to Victor Saw Works, Inc., Middletown, N. Y.

1 1 1

U.S. Lags In International Standards Work, A.S.A. Reveals



The United States ranks 18th among the national standards organizations of 34 nations in degree of participation in international standards work, holding secretariats of eight technical committees. This is revealed in a statement on the 1952 activities of the International Organization for Standardization (ISO), made by the American Standards Association, U. S. member of the group.

The French Standards Association led in participation by taking part in the work of 75 of the 76 ISO technical committees that are coordinating national standards in such fields as electrical, mechanical, metallurgical; in textile, rubber and plastic industries; building trade; photography and motion pictures; food packaging; and in many other fields as important, including hos-

(Please turn to page 328)



want super service on high speed steels?

That's what you'll get at Crucible. We have warehouses that are readily accessible in all parts of the country, and each is well stocked with REX high speed steel bars, flats, forgings and tool bits.

And no matter which Crucible warehouse you buy from, you can be assured that each piece will be of uniform quality. For Crucible is a fully integrated steel manufacturing operation, with 100% control over quality through each phase of production — from mining and melting to the last step of processing.

For prompt, dependable deliveries of high speed steels, and a uniformly high standard of quality in each piece, call your nearest Crucible warehouse.

Stocks maintained of:

Rex High Speed Steel . . . ALL grades of Tool Steel (including Die Casting and Plastic Die Steel, Drill Rod, Tool Bits and Hollow Drill Steel) . . . Stainless Steel (Sheets, Bars, Wire, Billets, Electrodes) . . . AISI Alloy, Max-el Machinery, Onyx Spring and Special Purpose Steels

CRUCIBLE

first name in special purpose steels

53 years of *Fine* steelmaking

WAREHOUSE SERVICE

CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA.

Branch Offices and Warehouses: ATLANTA • BALTIMORE • BOSTON • BUFFALO • CHARLOTTE • CHICAGO • CINCINNATI • CLEVELAND • DAYTON
DENVER • DETROIT • HOUSTON • INDIANAPOLIS • LOS ANGELES • MILWAUKEE • NEWARK • NEW HAVEN • NEW YORK • PHILADELPHIA • PITTSBURGH
PROVIDENCE • ROCKFORD • SAN FRANCISCO • SEATTLE • SPRINGFIELD, MASS. • ST. LOUIS • ST. PAUL • SYRACUSE • TORONTO, ONT. • WASHINGTON, D.C.

HERE'S THE EXTINGUISHER YOU PICKED AS "EASIEST TO USE" OVER THREE OTHER LEADING BRANDS . . .



Safety and Plant Engineers—here's how you voted: In a national survey recently completed, 100% of your replies stressed *ease of operation* as a major factor in Extinguisher selection. And on the basis of being "easiest to use", 86% of your replies specified Randolph over the nearest brand—66% specified Randolph over *three* other leading brands, *combined*!

With no nozzles to adjust, no valves to turn, Randolph Extinguishers are 100% panic-proof. Just snap from the bracket, aim and press the trigger. You KNOW how to use this extinguisher *just by looking at it*!

COMPLETE LINE OF EXTINGUISHERS AND AUTOMATIC EXTINGUISHING SYSTEMS

Make sure your plant is mobilized for fire . . . with easy to use, simplified RANDOLPH Equipment. Sizes from 2½ to 50 lbs. Manual and automatic systems. Write Randolph Laboratories, Inc., 1 E. Kinzie St., Chicago 11, Illinois.



(Continued from page 326)

pital stretchers and transfusion equipments.

The British Standards Institution, which participates in the work of 63 technical committees, leads in the number for which it serves as the secretariat nation. It heads 16 committees.

Other nations with heavy participation in committee work are Germany (69 committees), Netherlands (68), Belgium (53), Italy (52), Sweden (49), India (47), Switzerland (44), and the U.S.S.R. (38).

Participates in Committee Work

American industry, through the American Standards Association, participates in the work of 23 technical committees. It holds secretariat status of eight of these committees. These are test pressures for stationary boilers; copper and copper alloys; petroleum products; cinematography; photography; plastics; determination of viscosity; and material for pipe lines. In addition, the U. S. is kept informed of the work of 18 other ISO committees.

The U. S. does not participate in or observe the work of 35 committees.

In releasing the report, Admiral George F. Hussey, Jr., managing director of the American Standards Association, stated: "While the participation of the U. S. industry in ISO work is not broad, it must be viewed in terms of change and trend. U. S. participation is much heavier than it has ever been in 26 years of formal international standards work, and it has had its greatest increase in the last few years.

"Within the past few weeks, the machine tool industry has formally elected to participate in ISO work in its field for the first time. Those groups concerned with national standards in cylindrical limits and fits are expected to take similar action shortly.

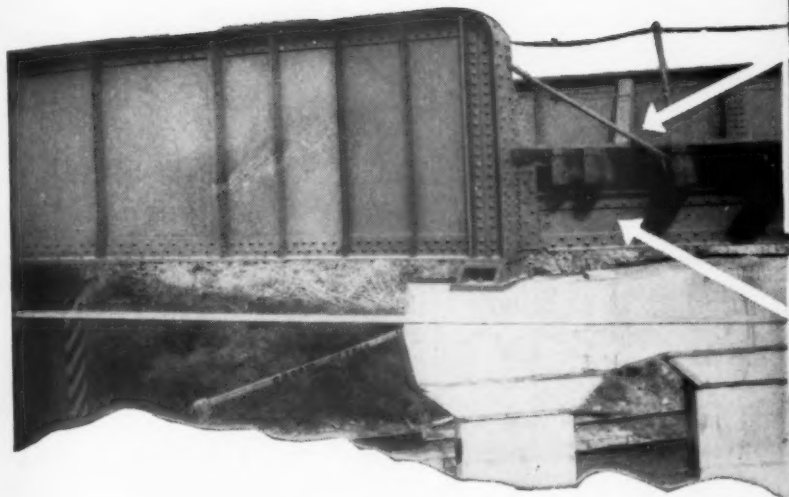
"We hope that other industries not now participating on ISO committees will enter this movement and give the U. S. the position of leadership in international standards work it needs and does not now have.

Standards Will Aid Purchases

"We believe that international coordination of national standards must precede an expansion of international trade, and that the ISO is the ideal instrument through which American industry can develop these standards.

"American industry will be aided

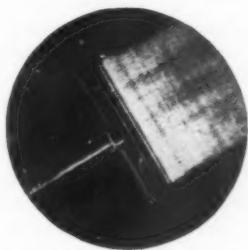
(Please turn to page 330)



All steelwork on this bridge was flame-primed before paint was applied. Today, after 9 years' service, the original paint job still provides complete protection against corrosion. Present condition of surfaces is clearly shown by unretouched close-ups.

Your Steelwork . . .

How Will It Look in 1960?



Steelwork you coat with good paint today can still look like new ten years from now, *if you flame-prime all exposed surfaces first.* And what you'll save on main-

tenance, because of increased protection due to flame-priming, will more than pay for all the flame-priming apparatus and materials you need for the job.

Flame-priming is simple to do, requires little equipment, and costs little. A brush of oxy-acetylene flames pops off scale and drives out moisture. Paint applied to the warm, dry surface goes on quickly

and smoothly, bonds tightly, and lasts longer.

Flame-priming is one of many time- and money-saving LINDE methods for making, cutting, joining, treating, and forming metals. So, whatever you do with metals, there is a good chance that LINDE know-how, show-how, and equipment can help you do it better, more quickly, or at lower cost.

To find out, without obligation, telephone or write our nearest office today. LINDE AIR PRODUCTS COMPANY, a Division of Union Carbide and Carbon Corporation, 30 East 42nd Street, New York 17, N. Y. Offices in Other Principal Cities. In Canada: Dominion Oxygen Company, Limited, Toronto.

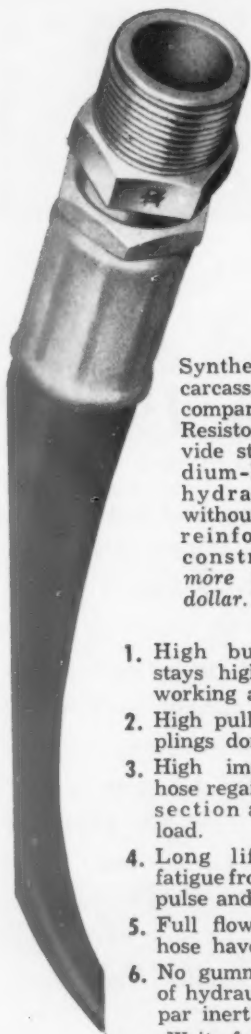
Linde
Trade-Mark

Products and Processes for MAKING, CUTTING, JOINING, TREATING, AND FORMING METALS

The term "Linde" is a registered trade-mark of Union Carbide and Carbon Corporation.

New **RESISTOFLEX**
hose assembly . . .

**withstands
medium-high
pressures
without wire
reinforcement**



Synthetic fibre-braid carcass and non-aging compar tube in this Resistoflex hose provide strength for medium-high pressure hydraulic systems without need for metal reinforcement. This construction means more hose value per dollar. Here's how.

1. High burst strength—stays high even as hose working age increases.
2. High pull strength—couplings don't pull out.
3. High impact strength—hose regains original cross section after crushing load.
4. Long life—immune to fatigue from hydraulic impulse and flexing.
5. Full flow—fittings and hose have same I.D.
6. No gumming or clogging of hydraulic circuit—compatible inert to oils.

Write for Data Sheet
No. MH-1-11.

RESISTOFLEX
CORPORATION
Belleville 9, New Jersey

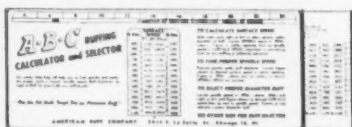
(Continued from page 328)

in selling its goods in a competitive foreign market if it meets the standards requirements of the customer countries—as others competing foreign industries are sure to do. It will be aided in its purchases from abroad, including raw materials, if it speaks the same technical and commercial languages as the country it is buying from."

Founded in London in 1946, the ISO held its second triennial meeting at Columbia University last June. At this two-week session, Dr. Hilding Törnebohm of Sweden, technical director of SKF Industries, was elected to succeed Dr. Albert Caquot of France as president for a three-year term.

1 1 1

**Buffing Guide Offered Free
By American Buff Company**



A pocket calculator and buffing guide is offered free on request to American Buff Company, 2414 S. LaSalle Street, Chicago 16, Ill. Designed for quick, easy reference, this handy tool is simple to use, small and compact to fit shirt or coat pocket.

Simple directions printed on the plastic case make fast, accurate buffing decisions possible on all types of jobs. Slide-rule operation answers such questions as: What type of buff is required for polishing aluminum die-castings; what diameter wheel produces a certain surface speed. It helps shopmen find the right buff, the right size, the right speed for every buffing job.

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**SDPA Proposes New Definition
For Small Manufacturing Firms**

New proposed standards for distinguishing small manufacturing concerns have been prepared by the Small Defense Plants Administration and sent to approximately 1,200 trade associations and small business groups concerned with manufacturing for their review. SDPA Administrator John E. Horne said that SDPA plans to adopt the new definition, perhaps with modifications, after the views of various industry and small business groups have been studied.

**need
relays?**

**Potter &
Brumfield
is your
BEST SOURCE
for
CUSTOM-BUILT
RELAYS**

here's why!



Design

Fast, accurate development of relays and small electro-mechanical assemblies to exact military or industrial specifications.



Engineering

Extensive research, laboratory and model shop facilities available to help solve design engineers' most complex relay problems.



Manufacturing

Three large, fully equipped plants geared to meet today's rigid production requirements . . . single shift capacity of 10,000 relays per day!

- Samples, Recommendations and Quotations on Request.
- P & B Sales Engineers in Principal U. S. and Canadian Cities.
- Write for Master Catalog Showing Full Line of Basic Structures.
- Standard Relays Available At Your Electronic Parts Distributor.

**Potter &
Brumfield**
PRINCETON, INDIANA

Export: 13 E. 40th St., N. Y., N. Y.



Here a big wire rope emerges from Bethlehem's 66-in. closing machine. At this stage of the checking, the inspector is making sure that the diameter is within specified tolerances.

He seldom has to say "No"

Saying "no" can be part of the Bethlehem rope inspector's job. Fortunately, he seldom has to use the veto power, for Bethlehem rope is made with such care that rejects are few. But the inspector won't hesitate to stop a rope if even a minor detail is subject to question.

This is merely common sense. But it's also something more. It's the best possible protection for the buyer. It means that the dollars you spend for Bethlehem wire rope will buy what you pay for—a product

that meets the highest standards of workmanship.

In the making of this product, nothing is left to chance. That's one of the reasons why Bethlehem rope is dependable rope... the kind that will serve you well in the toughest sort of going.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

*On the Pacific Coast Bethlehem products are sold by
Bethlehem Pacific Coast Steel Corporation. Export
Distributor: Bethlehem Steel Export Corporation*

When you think WIRE ROPE... think BETHLEHEM



MAXIMUM

TOUGHNESS • HARDNESS • STRENGTH



OIL HARDENING TOOL STEEL

WL offers "Whelco" M—a tool steel of maximum toughness, hardness and strength—a steel to assure maximum results at low cost! "Whelco" combines great penetration of hardness, great toughness at high hardness, wide hardening range, fine grain structure, and desirable non-deforming characteristics. "Whelco" has good forging properties and is readily machinable in the annealed condition. All WL warehouses stock "Whelco" M tool steel in a wide variety of flats and squares. Call your nearest WL man for a trial order—the results will speak for themselves!

WL steels are metallurgically constant. This guarantees uniformity of chemistry, grain size, hardenability—thus eliminating costly changes in heat treating specifications.

Write today for your FREE COPY of the Wheelock, Lovejoy Data Book, indicating your title and company identification. It contains complete technical information on grades, applications, physical properties, tests, heat treating, etc.



**WHEELOCK,
LOVEJOY
& COMPANY, INC.**

Warehouse Service

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BILLETS AND FORGINGS FOR PRODUCTION, TOOL ROOM AND MAINTENANCE REQUIREMENTS

Shell Molding Materials Available In "Package"

A four-in-one "foundry package" of all synthetic materials required for the new shell molding process and for traditional sand casting is now available from the General Electric Company's Chemical Division, the nation's only manufacturer of both phenolic resins and silicone chemicals.

Included in this package are two materials essential to shell molding—S-1054, a new phenolic resin binder, and SM-55 silicone parting agent to release shell molds from their metal patterns. These, together with G-E 12353 liquid core-binder resin and G-E 3255 Permafil for impregnating porous castings, enable foundries for the first time to obtain all necessary synthetics from a single supplier and to receive expert application assistance, General Electric has announced.

S-1054, a new two-stage powdered phenolic resin, is said to have optimum properties for binding quality shells. Because it starts melting slowly when the sand-resin mix is dropped on the pattern, it makes possible denser packing, particularly in deep draws, slots, holes and other intricate areas. These dense shell molds turn out castings with less burn-in.

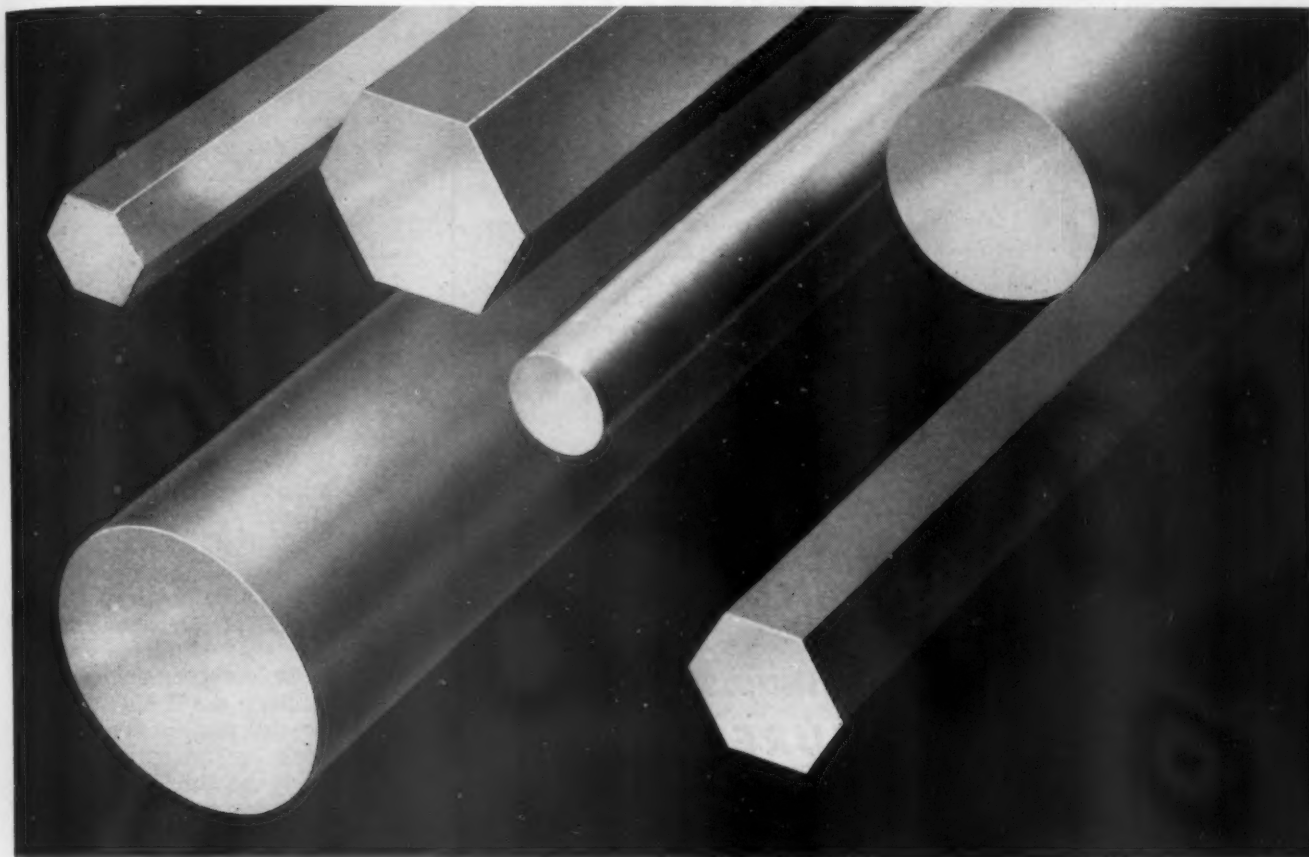
SM-55 is a water emulsion silicone parting agent which presents no fire hazard. It leaves negligible residue on patterns and has improved release properties that permit the use of smaller amounts of silicone.

Nearly all foundries engaged in shell molding have found that silicones provide the most efficient release of the fragile shells from hot patterns. G. E. says that the largest producers of shell castings are using SM-55 parting agent extensively.

G-E 12353, third member of the "foundry package," is a liquid phenolic core-binder introduced a year ago to enable sand cores to be baked in about half the time and at lower temperatures than is possible with core oil binders. Although used in the same manner as conventional core oils, G-E 12353 provides greater dry strength and hardness. Cores bound with this material have better collapsibility and easier shake-out than those bound with core oils. It has a pleasant odor in contrast to resins containing greater quantities of free formaldehyde. General Electric knows of no cases of dermatitis resulting from its use.

(Please turn to page 336)

for you...the nation's fabricators



Rod and Bar to meet your specifications

Available in a wide range of alloys in rolled and cold finished rod and bar, round and hexagonal standard screw machine stock, hexagonal bar, redraw rod, rivet rod and round forging stock. In addition, Kaiser Alumi-

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TO SUPPLY you and thousands of other fabricators with aluminum in the forms in which it can be used most economically, Kaiser Aluminum produces a broad line of basic and semi-finished mill products.

More than 85 per cent of Kaiser Aluminum's total production is sold in the form of these mill products for fabrication by customers. It's the highest percentage in the industry.

Kaiser Aluminum has earned an unsurpassed reputation for promptness, dependability, and helpful service in providing these products.

Included among Kaiser Aluminum service facilities are: the Sales Engineering Department, the Development Division, and the Metallurgical Research Division—all invaluable sources of experienced assistance and technical data to users of Kaiser Aluminum.

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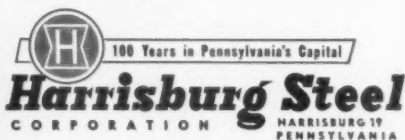
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Harrisburg Steel offers you the choice of a complete line, a complete range of sizes and capacities, in both domestic and export types... from 14 to 400 cubic feet. Orders from a few dozen to several thousand cylinders all receive prompt attention. Write for our Cylinder Catalog and current prices.



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ELECTRICAL FITTINGS
FOR WIRE and CABLE

(Continued from page 332)

G-E 3255 Permafil is a low viscosity pressure impregnating fluid recommended for sealing porous castings against air and liquid leaks. It permits inexpensive salvage of leaking castings which might otherwise have to be scrapped. Castings so treated may subsequently be machined, painted, and used at temperatures up to 150C with no deterioration of the Permafil seal. It is approved on government specifications.

1 1 1

Pamphlet Shows Savings Gained Through Safety

A new leaflet on plant safety—the fifth in a series of six on this subject—is available from the Small Defense Plants Administration. The leaflet, "Reducing Accident Costs Through Safe Work Methods," was prepared for SDPA by the Safety Engineering Staff, Bureau of Labor Standards U. S. Department of Labor.

No plant safety program can be really effective, the leaflet points out, unless the management takes the initiative in "organizing and supervising a continuing program of safety education and training; first, for their foremen, and second, through them for all their employees."

"The safety of the workmen is the primary purpose of safe work methods," the leaflet points out. "But there are other advantages, too. Workers who know they are using safe work methods typically turn out more work than those relying on haphazard or traditional methods. The quality and uniformity of production are improved by the standardization of methods and by the training involved. Cost of the product or service is often lowered. Injury frequency rates—and hence compensation insurance rates—are reduced. Shop morale is strengthened. Relations between workers and management are improved by a joint approach to a problem that concerns both."

Leaflets are available free on request at all SDPA field offices.

1 1 1

1952 Nickel Production

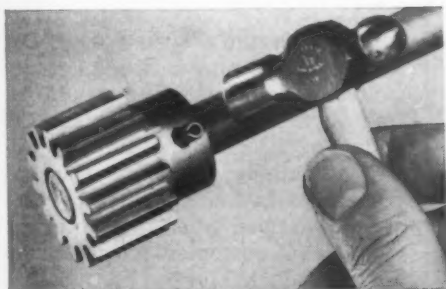
It is estimated that the free world output of nickel in 1952 exceeded 315,000,000 pounds, compared with 295,000,000 pounds in 1951. Canadian production amounted to approximately 280,000,000 pounds, or about 90 per cent of the total.

Where can you use this simple fastener?



No threading, peening or precision
drilling with ROLLPIN

Rollpin is driven into holes
drilled to normal production-
line tolerances.



It compresses as driven.



Rollpin fits flush . . . is vibration-proof.

Rollpin is the slotted tubular steel pin with chamfered ends that is cutting production and maintenance costs in every class of industry.

This modern fastener drives easily into standard holes, compressing as driven. Its spring action locks it in place—regardless of impact loading, stress reversals or severe vibration. Rollpin is readily removable and can be re-used in the same hole.

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If you use locating dowels, hinge pins, rivets, set screws—or straight, knurled, tapered or cotter type pins—Rollpin can cut your costs. Mail our coupon for design information.



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Please send me the following free fastening information:

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product. What fastener
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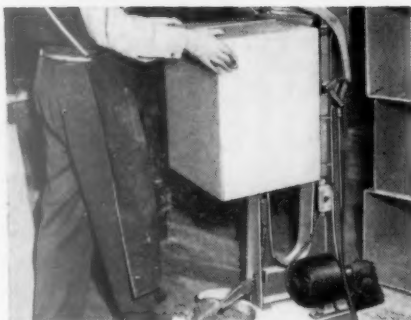
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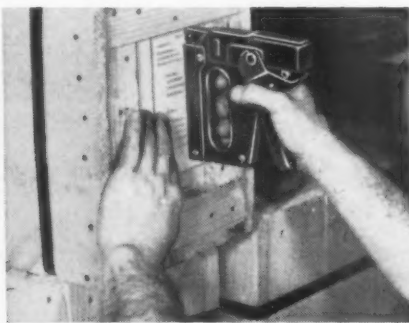
Bostitch Box Bottom Stitchers and Staplers—Many different machines to fit your exact need—whether it's occasional box bottoming or high-speed, continuous production. There's no storage problem—you make up containers as needed.



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Bostitch Autoclench—Just touch it to a corrugated container, press the lever and a strong steel stitch seals the spot securely. No need for a blade or anvil, the staple closes itself. Easy to operate. Easy to load. See it demonstrated by your local Bostitch man.



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Write for free bulletin which shows how Bostitch shipping-room tools can save time and money for you. Mark and mail the coupon below.

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Please send me a free copy of your bulletin on Bostitch stapling machines for shipping-room use.

I am particularly interested in a better and faster method for:

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| <input type="checkbox"/> Top-sealing | <input type="checkbox"/> Bag-sealing | <input type="checkbox"/> Other _____ |

Name _____

Company _____

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BOSTITCH®

AND FASTER
fastens it better ₁ with wire

Industrial Truck Maker Sees Stiff Competition; Says Buyers Expect Quality, Long Service

"The material handling industry as a young industry and as a growth industry, should have a good year not only in 1953 but in the predictable future as well." This forecast was voiced recently by Sheldon K. Towson, president of the Elwell-Parker Electric Company, Cleveland manufacturer of industrial trucks.

"In 1953, we can expect stiff price competition, particularly in the industrial truck phase of the material handling industry. If controls were removed tomorrow, there would be no marked increase in the price of industrial trucks.

"One thing is certain. The future sales of industrial trucks, for example, will not be dependent on the introduction of increased numbers of gadgets, as some people think. The manufacturer who builds a truck that will give good service for 10 to 15 years, as a customer expects, is the manufacturer who will enjoy the best of the competition ahead.

"Along with this thinking, and an axiom with the Elwell-Parker Co., is that in addition to a high-quality product, a manufacturer should sell an answer to a specific problem. The future of the handling industry will depend largely on selling this important extra because the time has already arrived when it is necessary to offer a customer more than a basic product."

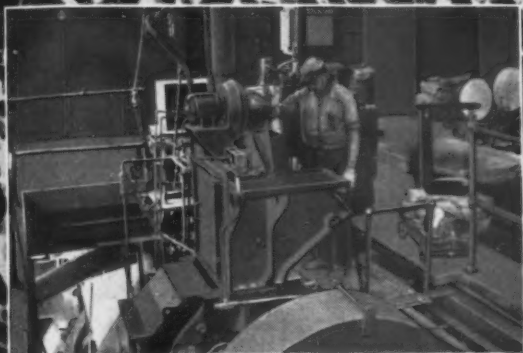
What of Future Developments

"I have been asked about diesel-powered industrial trucks which are so popular today in England. It is my opinion that this type of vehicle will gain some popularity in this country but only for certain applications: in the yard, on the dock or for other outdoor operations.

"Palletized handling may become less popular because of the original investment in the pallets and skids. The necessity of unloading goods from these carriers prior to shipping is also encouraging users to find other ways for handling them. It is for that reason that industrial truck manufacturers are designing certain attachments for so called 'palletless handling'.

"As for the trucks themselves, those which we are now manufacturing will be in use 10 to 15 years from now. Of that we are sure. There will be refinements and improvements on future vehicles, but I do not believe there will be any remarkable changes in the basic construction of the trucks themselves."

RUBATEX *makes Rubber Behave!*



Compounding ingredients are blended with natural or synthetic rubber in Banbury mixers or on mixing mills for uniformity of cell structure.



Closed cells are responsible for the structural strength and superior physical properties of Rubatex—not possessed by ordinary sponge rubber with open coarse cells which are wide open to oxygen and moisture.

Rubber has a stubborn "memory" and constantly strives to return to its original character. Rubatex temporarily knocks the "fight" out of rubber

by blending it with specially developed compounding ingredients on mixing mills or in Banbury mixers to assure a uniformity of cell structure throughout.

When rubber regains its wind, Rubatex hits it again by blowing nitrogen under pressure into the precured sheets—forming millions of nitrogen-filled cells, permanently sealed with tough live rubber. Thus Rubatex reforms and transforms rubber into a material with a unique closed cellular structure that shuts out oxygen, heat, cold, moisture, dust and dirt . . . making RUBATEX far superior to other soft rubber materials for sealing, gasketing, cushioning, sound deadening, vibration isolation, and packaging applications.

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Send us details of your proposed applications and let us send you samples and recommendations.

Write Dept. P-4, Great American Industries, Inc., Rubatex Division, Bedford, Virginia.

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REFRIGERATION — Gasketing for refrigerator and cold storage room doors.

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- Appliance gaskets
- Bath and kitchen mats



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The facilities of Vinco are being expanded and improved to better serve the old and new customers.

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Dependability

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MILLIONTHS OF AN
INCH FOR SALE

Phone-In-Mask Protects Underground Workers

Borrowing an idea from deep sea divers, men cleaning underground fuel storage tanks can now work more safely and efficiently because of two-way telephone communication incorporated in the face piece of the hose mask, which the worker wears while underground. Use of the device, named "Maskfone" and put in production by Mine Safety Appliances Company, Pittsburgh, Pa., enables the man in the tank to report if he needs more air; if the hose leading to the surface becomes fouled on an obstruction; or to advise of any unusual hazard.



Descending worker prepared to keep contact with surface personnel.

Efficiency is also increased since the men are able to report conditions as they discover them, without the necessity of returning to the surface. They are also able to receive instruction while on the job and order tools and equipment sent down to them. An interesting feature of the device is that no outside source of power is needed for voice transmission even over miles of connecting cable. In effect, vibration of the speaker's voice provides the power needed.

In addition to earphones with head harness, a special speaking diaphragm is incorporated in the mask. This may be of all-service or other canister type, tank type, oxygen generating, or as in this case, hose masks. The mask-wearer's voice, through the diaphragm, may be heard in the immediate vicinity. When connected to the "Maskfone", the diaphragm serves as part of the transmitter. A neoprene-covered cable connects the mask transmitter with "topside" personnel. The latter use a conventional hand-held phone.



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Twelve years have seen a tremendous growth from the small mill which originally housed our Steel Division to its present diversified operation. But though our growth has been rapid, we have just barely kept pace with demand. Today Copperweld is rushing to complete an extensive expansion program to increase its furnace and rolling capacity. Tomorrow we will be able to assure you even larger quantities and prompter delivery on Aristoloy Steels.



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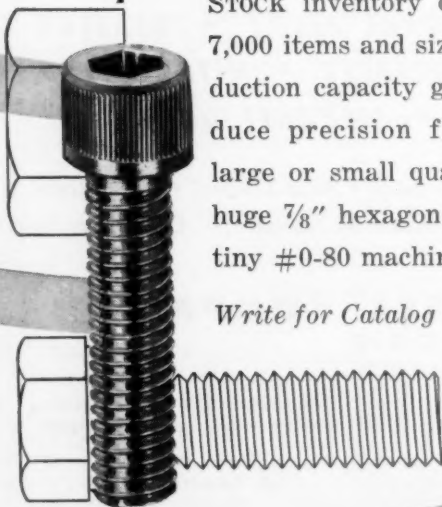
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INDUSTRIAL buyers have learned to depend on **ANTI-CORROSIVE** for fast, dependable service on all types of stainless steel fastenings. Draw on our **IN STOCK** inventory of more than 7,000 items and sizes and a production capacity geared to produce precision fastenings in large or small quantities, from huge $\frac{7}{8}$ " hexagon head bolts to tiny #0-80 machine screw nuts.

Write for Catalog 53P today.



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Business Outlook Favorable Say Industrial Executives

The election of President Eisenhower will have a favorable long-run effect on business, but little effect in the immediate future, according to leading business executives queried in a recent survey. Their views were developed in a survey of 187 manufacturing companies conducted by the National Industrial Conference Board.

A number of companies, in appraising the over-all outlook for business, express the hope that the election will mean "greater reliance on free markets and greater efficiency," and look for "an atmosphere which will make for constructive improvements on a long-range basis."

Increased Volume to Boost Sales

Nearly two thirds of all companies surveyed by the Board expect sales (billings) in the first half of 1953 to exceed those in the corresponding period of 1952, with "volume rather than price" accounting for most of the increase. The survey adds that only one out of six companies expects lower sales. This optimism about sales prospects pervades metal and nonmetal concerns alike, although the proportion of optimistic companies is higher in the non-metals industries.

The industries in which sales prospects are reported as most favorable as compared with the first six months of 1952 are: automotive, chemicals, electrical appliances, leather, machine tools, miscellaneous nonmetals, paper, petroleum, railroad equipment and steel. The prospective increases over last year must be discounted for the steel and oil industries, however, because of strikes and abnormal conditions prevailing in early 1952.

Profits

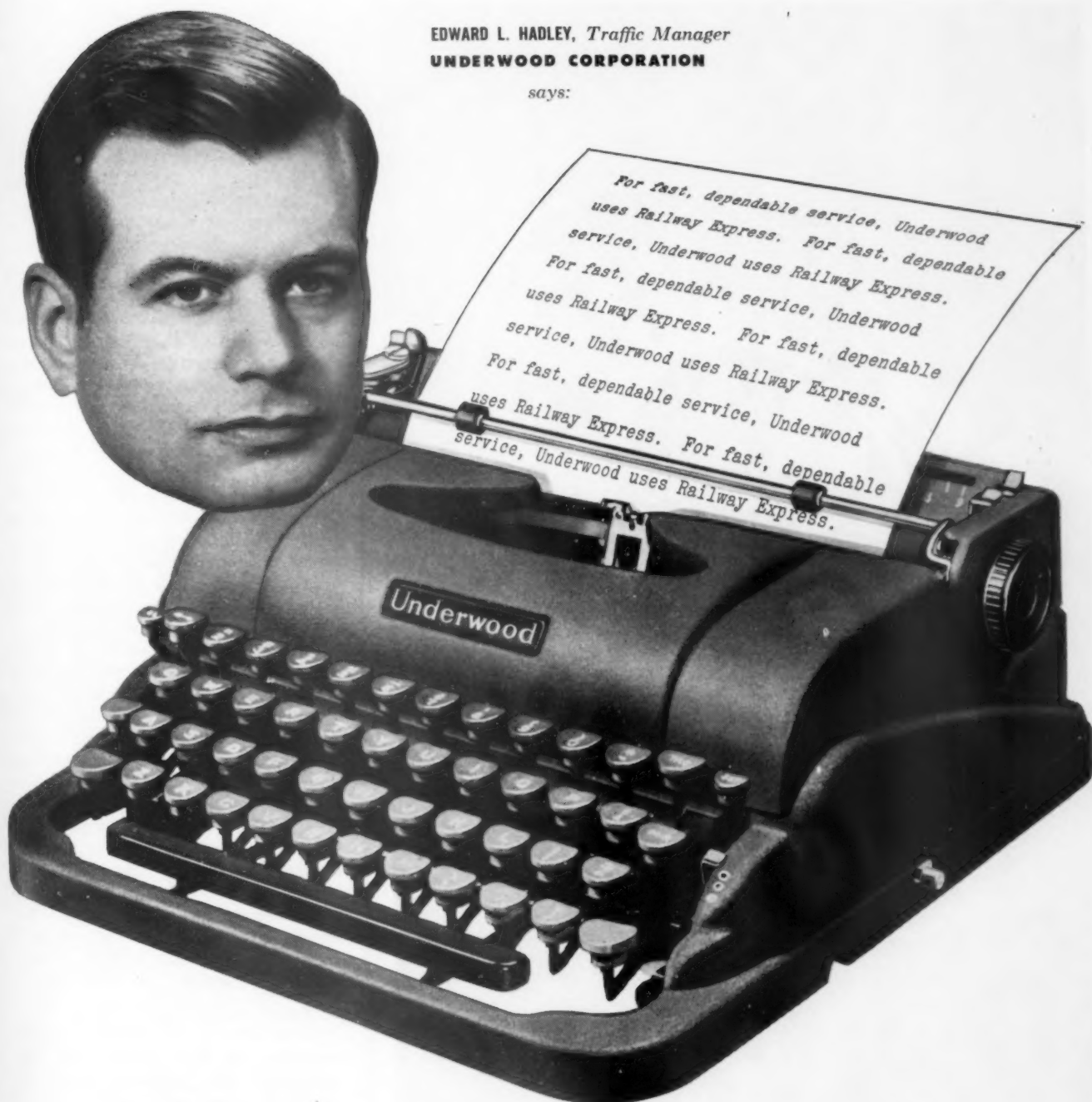
The Board notes nearly a third of the companies surveyed expect higher profits (both before and after taxes) in the first half of 1953 than in the first half of 1952. However, about the same number anticipate declines.

Reports indicate a "brighter" profit outlook for nonmetal companies and a "less favorable" outlook for metal manufacturers. Twenty-six of the sixty-five nonmetal manufacturers reporting on the outlook for profits expect to earn more, after taxes, in the first half of 1953 than in the first half of 1952. Sixteen

(Please turn to page 344)

EDWARD L. HADLEY, Traffic Manager
UNDERWOOD CORPORATION

says:



"Any time we have important shipments — any size — we depend on Railway Express for safe delivery on the specified date.

"We find the service fast. Also — the convenient packaging plan, careful handling, prompt pickup and door-to-door delivery make Railway Express more economical in the long run."

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PRESSURE SENSITIVE

MASKING TAPES

INDUSTRIAL TAPE CORPORATION, NEW BRUNSWICK, N. J.

(Continued from page 342)

expect declines and seventeen expect little change. In contrast, forty-two metal manufacturers foresee declining profits, against twenty-eight expecting increases and twenty-four anticipating no change.

The Board found that while many executives look for a "modification" of the tax laws, particularly the repeal of the excess-profits tax, many do not believe this will affect net profits in the first half of 1953.

The Inventory Outlook

According to the Board: "In the past twelve months as many manufacturing companies have increased inventories, as a percentage of sales, as have reduced them." A fourth of the companies surveyed have experienced no change in the inventory-sales ratio. But during the next six months, twice as many companies will reduce inventories as will increase them, and about a third of those reporting on their inventory outlook expect little change. With regard to metal and nonmetal companies specifically, the Board's survey found that during the past year there has been no appreciable difference in inventory trends. In the next six months, about the same percentage of metal and nonmetal companies (40%-50%) will reduce inventories. However, while only 20% of the metal companies will hold the inventory-sales ratio constant, 40% of the nonmetal companies will do so. A quarter of reporting metal companies will increase inventories, as a per cent of sales, as against only 10% of non-metal companies.

Capital Appropriations Leveling Off

With isolated exceptions, the executives say they have "not significantly" changed their capital investment plans as a result of the election.

Although close to 40% of the companies cooperating in this survey expect capital appropriations in the first six months of 1953 to be less than those of early 1952, almost as many firms look for no change. Only one out of five companies expects to increase capital appropriations.

The apparent "leveling off" of capital appropriations seems to be due in part to the completion of large postwar expansions. A number of companies indicate that they completed major building programs in 1952 and that expenditures for the immediate future will be on the basis of normal replacement.

(Please turn to page 346)

DOUBLE CIRCLE TOOLS

feature two important factors
of special interest to
purchasing agents...

Quality

Double Circle Tools are manufactured with the most exacting care to assure a precise, quality product. 20% of CHICAGO-LATROBE employees are inspectors who carefully check every independent manufacturing operation. Inspection starts with raw material which must pass CHICAGO-LATROBE'S exclusive "close-limits on analysis" specifications before it is accepted. Inspection follows every independent manufacturing operation on every individual tool straight through to the finished product

... which must be a precise, top quality tool that will give outstanding performance and long life.

The result ... you can buy Double Circle Tools with confidence.

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CHICAGO-LATROBE has proved its right to be proud of service. Every Distributor of Double Circle Tools is as close to the factory as his telephone and prompt delivery is just a few hours away, in emergencies. It is not uncommon to receive a special order by phone for a stock item and have it delivered at destination before the written confirming order is received. This has saved many a manufacturer from embarrassment.

The combination of Quality and Service is the reason many manufacturers now specify Double Circle Tools regularly. You can also enjoy this important combination by specifying Double Circle Tools when you order.

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Be sure to
see the
Towmotor Exhibit
at the
5th National
Materials Handling
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TOWMOTOR
THE ONE-MAN-GANG®

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SINCE 1919

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(Continued from page 344)

Forty per cent of the companies surveyed report their backlogs have declined during the past year. Nearly one third have experienced increases. Over a third of the companies reporting on the outlook for backlogs during the next six months expect them to increase or remain good. However, the survey adds, almost as many firms expect them to decrease in the first half of 1953.

Some executives appear to welcome a reduction of backlogs while others hope they won't go much higher because "that would involve delivery dates which are too far into the future."

1 1 1

Coal Industry Set To Fight Foreign Oil Imports

The bituminous coal industry has called upon Congress to halt the rising tide of residual fuel oil flowing into the Atlantic seaboard from foreign refineries, chiefly in Venezuela. The displacement of bituminous coal in its customary markets has adversely affected coal mining operations in many producing districts, last year's 128 million barrels of imported residual oil being equivalent to 31 million tons of coal. Railroads, too, have felt the impact of the oil imports as it has resulted in lessened coal traffic.

This has induced the executive committee of the National Coal Association, with its headquarters at 804 Southern Building, Washington 5, D.C., to adopt a resolution calling upon Congress to halt the rising tide of residual oil entering the country. A quantitative limitation on its volume is demanded. In pressing for this, the resolution claims that the prospect of the flood of foreign residual oil continuing unabated threatens "further loss of employment in the United States, impairment of the bituminous coal industry, and unwise dependence on foreign sources of fuel, contrary to the best interests of the nation; and whereas the maintenance of a strong domestic bituminous coal industry is essential to the nation's defence."

1 1 1

New Standard Proposed For General Purpose Vinyl Film

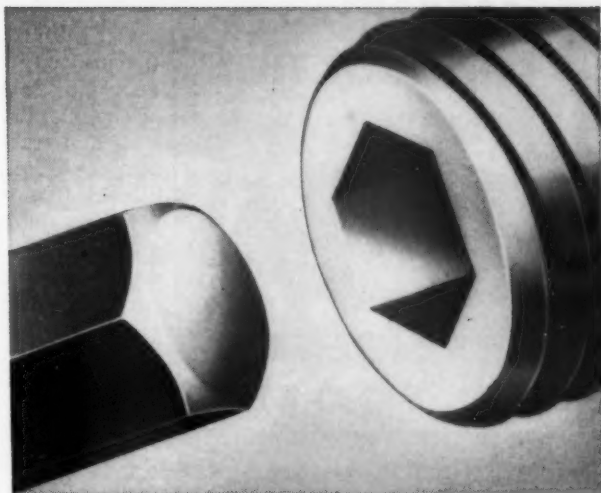
A Recommended Commercial Standard for General Purpose Vinyl Plastic Film is being circulated to the industry and the public for written acceptance, according to the Commodity Standards Division of

(Please turn to page 350)

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DESIGN, PRODUCTION,
and **MAINTENANCE**

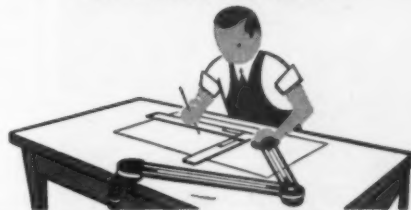
Bristol makes a complete line of socket screw products in sizes from 0 wire to 1 in. in diameter. Standard and listed sizes are stocked in heat-treated alloy steel. Brass, bronze, monel, stainless steel, etc.; are furnished on special order. All Bristol screws are carefully designed to close tolerances (A.S.A. approved, Class 3 fit) and precision-threaded either National Coarse or National Fine.



HERE'S WHAT BRISTOL'S HEX SOCKET SCREW DOES FOR

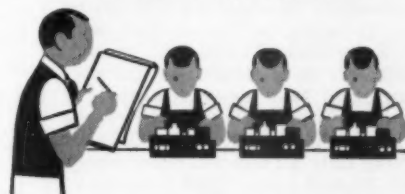
- ✓ withstands shock
- ✓ gives neater, more streamlined appearance
- ✓ provides stronger fastening
- ✓ permits more compact design
- ✓ withstands vibration

THE DESIGN ENGINEER



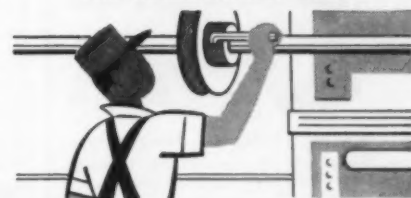
- all of the above, plus...
- ✓ saves time
- ✓ provides faster and easier assembly
- ✓ makes for less rejects
- ✓ prevents wrenches from slipping and marring surfaces

THE PRODUCTION ENGINEER



- all of the above, plus...
- ✓ provides easy disassembly
- ✓ makes for greater safety

THE MAINTENANCE MAN



Write for free bulletins showing applications. Only Bristol makes both Multiple-Spline and Hex... for severe and regular service.



SET SCREW



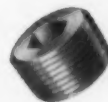
FLAT HEAD CAP SCREW



CAP SCREW



SHOULDER SCREW



PIPE PLUG

BRISTOL'S SOCKET SCREWS

Multiple-Spline and Hex
Socket Screws. Cap and Set



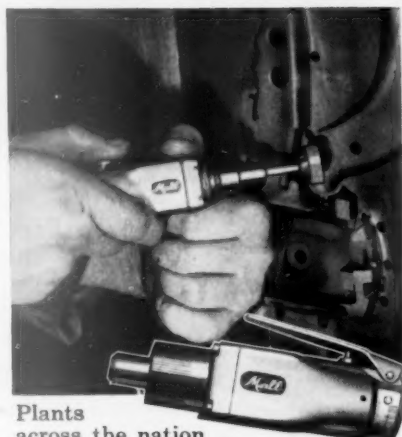
THE BRISTOL COMPANY, Socket Screw Division, Waterbury 20, Connecticut

A.3.1A

NEW featherweight PRODUCTION CHAMPS



PRECISION AIR TOOLS



Plants across the nation are boosting production—lowering costs—reducing worker fatigue with MALL Pneumatic Tools. The reason: abundant, vibrationless power; streamlined featherweight design; top-quality construction. Above is the new MALL PG-K-1030L Die Grinder weighing only 12 ounces. Guaranteed speed 30,000 rpm. with less than .0015 collet runout for extreme accuracy—a typical example of the precision engineering in MALL Air Tools.



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40 Factory-Owned Service Warehouses, Coast to Coast, to Service Our Customers Quickly and Capably.

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MU-8

Send me additional information about MALL Tools for Industry: ☐ Pneumatic ☐ Electric

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Company _____

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MALL TOOL COMPANY

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(Continued from page 346)

the U. S. Department of Commerce. It is based on a proposal by the Society of the Plastics Industry and was modified to meet the desires of the majority at an industry conference November 18, 1952.

The standard covers methods of test and requirements of general purpose plain or embossed vinyl plastic film to insure satisfactory products for consumer use. The requirements and methods of test specify thickness tolerances, yield per roll, width tolerances, shrinkage at elevated temperatures, contamination, appearance, cracking, tensile properties, tear resistance, volatility of plasticizer, water extraction, low temperature impact and flammability.

Mimeographed copies of the Recommended Commercial Standard, which is identified as TS-5165, may be obtained as long as the supply lasts by writing to F. W. Reynolds, Commodity Standards Division, U.S. Department of Commerce, Washington 25, D.C.

1 1 1

Shortage of Engineers Threatens Production

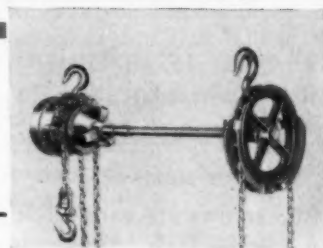
T. A. Marshall, Jr., executive secretary of the Engineering Manpower Commission of Engineers Joint Council, recently warned a meeting of manpower authorities that a shortage of engineers and scientists is imperilling industrial production and expansion.

"Right now," Mr. Marshall declared, "there is a need for 40,000 new engineering graduates for industrial, and civilian governmental needs alone, without considering the needs of military services or education. The grim facts on engineering graduates for the next four years are estimated in 1953 at 23,000; 1954 at 19,000; 1955 at 22,000; and in 1956 at 29,000."

He stated that industry was partially meeting the shortage by companies relieving engineers of various detailed duties that could be undertaken by sub-professional personnel and other technical help. The reason for the high demand for engineers can be found in: (1) the high rate of our industrial growth and expansion; (2) the increase in the proportion of engineers to gainful workers; (3) the requirements of a \$2 billion a year government research program; (4) the demand by the military for its operating needs. The shortage of engineers is expected to last for many years to come.

GET "Special"

CHESTER CHAIN HOISTS for special handling problems



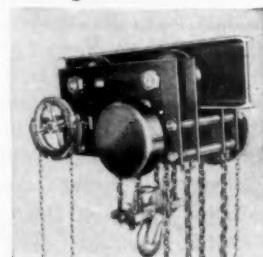
Extended Handwheel Type

... get faster service at CHESTER

If you have a special problem in your plant, in handling, lifting, lowering or moving... chances are excellent that there is a Chester Hoist "Special" that will simplify the operation and save you time and money.

For example, the Extended Handwheel hoist can be efficiently operated from a safe distance in lifting and moving hot, freshly painted or hard-to-handle loads. Or if floor to ceiling height in your plant is too limited for standard hoist and trolley equipment, the Low Headroom type with built-in trolley can easily solve that problem.

If you can use a Chester Hoist "Special" to facilitate your production, ask your distributor today—or write us for Chester catalog and tell us your "special" problem.



Low Headroom Trolley Hoist

CHESTER HOIST DIVISION

The National Screw & Mfg. Co.
Lisbon, Ohio



When It's
Grinding or Pulverizing

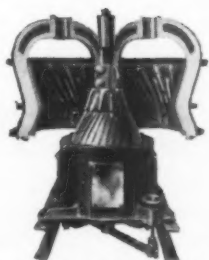
STURTEVANT
EQUIPMENT

*DOES THE
JOB FAST!*

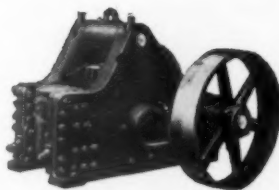
Whether you grind soft or hard materials, there is a Sturtevant Grinder or crusher exactly suited to your requirements.

Tough and rugged, Sturtevant Equipment has the built-in stamina to stand up under continuous operation. Most of this equipment has the "open door" accessibility which makes cleaning easy.

Look into Sturtevant Grinders and crushers for your applications. These machines will give you the exact mesh you want . . . cut your costs by increasing production. Write for catalog today.



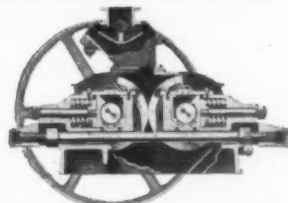
ROTARY FINE CRUSHERS for intermediate and fine reduction (down to $\frac{1}{4}$ "). Open door accessibility. Soft or moderately hard materials. Efficient granulators. Excellent preliminary Crushers preceding Pulverizers.



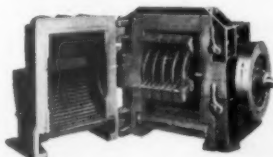
JAW CRUSHERS for coarse, intermediate and fine reduction of hard or soft substances. Heavy or light duty. Cam and Roller action. Special crushers for Ferro-alloys. Several types, many sizes.



RING-ROLL MILLS for medium and fine reduction (10 to 200 mesh), hard or soft materials. Very durable, small power. Operated in closed circuit with Screen or Air Separator. Open door accessibility. Many sizes. No scrapers, plows, pushers, or shields.



CRUSHING ROLLS for granulation, coarse or fine, hard or soft materials. Automatic adjustments. Crushing shocks balanced. For dry or wet reduction. Sizes 8 x 5 to 38 x 20. The standard for abrasives.



SWING-SLEDGE MILLS for coarse and medium reduction (down to 20 mesh). Open door accessibility. Soft, moderately hard, tough or fibrous substances. Built in several types and many sizes.

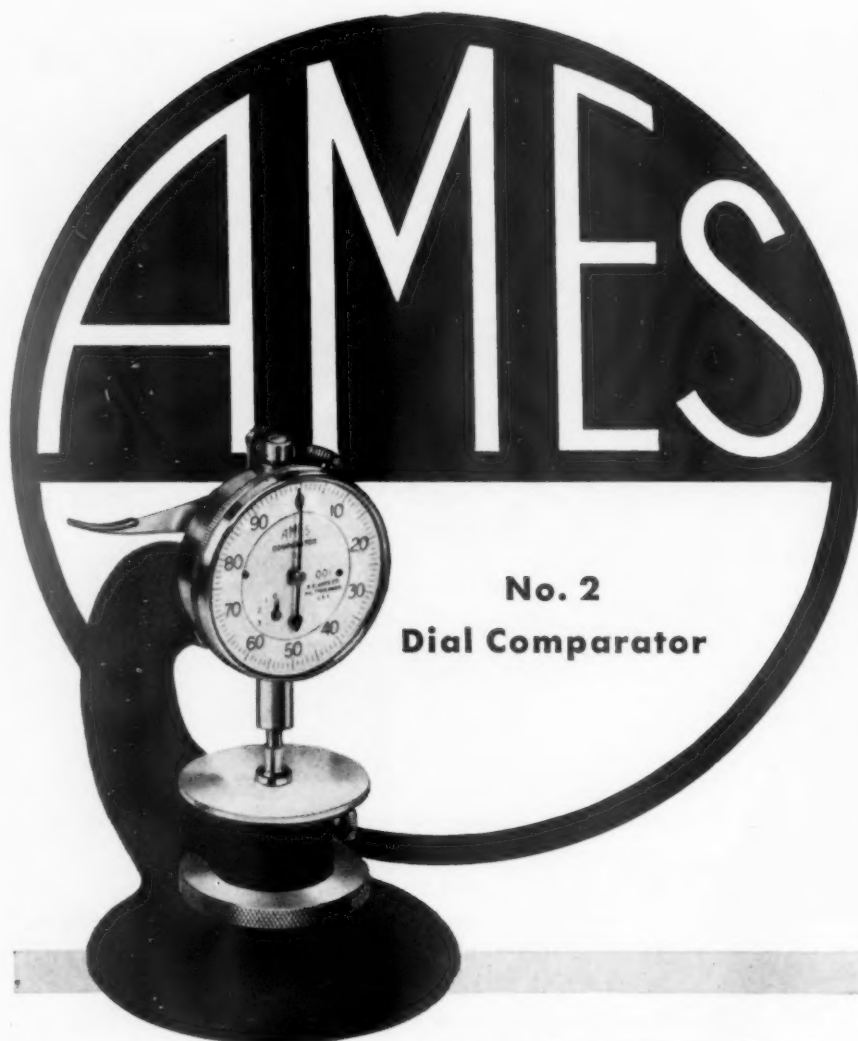


MOTO-VIBRO SCREENS screen anything screenable. Classified vibrations. Unit construction—any capacity. Open door accessibility. Open and closed models with or without feeders. Many types and sizes—range of work $\frac{1}{4}$ " to 60 mesh.

STURTEVANT MILL COMPANY

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This is smallest in the Ames' line of high quality dial comparators and it is ideal for desk or bench use in the fine inspection of small precision parts. It is light in weight, but its broad base makes it very stable. The capacity approximates that of the regularly supplied Ames No. 202 Dial Indicator which has a dial numbered 0-100, graduated in .001" and with a .250" range.

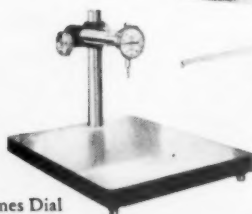
Should your job requirements differ, you can have the No. 2 with any Ames "Hundred Series" Dial Indicator. Send for Ames Catalog No. 58 covering the entire line of Ames Top Quality measuring instruments or, better still, send complete details of your Quality Control problem. Ames will suggest a solution — no obligation, of course.



Ames Long
Range Dial
Indicator
No. 2822



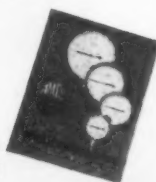
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22nd National Packaging Show Scheduled For April 20-23

Close to 25,000 business executives representing every state and 30 foreign countries are expected at the American Management Association's 22nd National Packaging Exposition in Chicago, Ill., April 20-23rd. The four-day show, together with its companion event, A.M.A.'s National Packaging Conference, will be the principal features of Packaging Week. The Exposition will require both wings of Chicago's Navy Pier to house an anticipated record 350 exhibitors of machinery, equipment, materials and services.

More than 1,500 packaging executives and technicians are expected to attend the conference sessions, April 20-22, which will also be held on the Navy Pier. The conference will be devoted to a consideration of a broad range of topics relating to packaging management and technique. It will highlight the many major changes that are taking place in the packaging field, including faster and simpler machinery; new applications of materials, improved production methods, etc. There is no charge for admission to the show but a nominal registration fee will be charged for admittance to the conference sessions.

If difficulty is experienced with finding hotel accommodations, prospective visitors to the Exposition are advised to write: Housing Bureau, Convention Bureau, 134 N. La Salle St., Chicago.

1 1 1

Bureau of Standards Issues New Lightning Protection Code

The National Bureau of Standards has issued a new Handbook, No. 46, giving the revised *Code for Protection against Lightning*. It costs 40 cents and can be ordered from the Government Printing Office, Washington 25, D. C. The code is sponsored jointly by the National Fire Protection Association, American Institute of Electrical Engineers and the National Bureau of Standards.

The Handbook should dissipate some of the widespread ignorance regarding proper installation practice which has resulted in great variations in lightning protection both of buildings and electrical equipment and, consequently, in installation of many inadequate systems. The volume also contains information on aluminum as a suitable material for lightning protective systems.

You name it...
NYB&P
makes a belt
to carry it!



Broad and varied is NYB&P's range of conveyor and elevator belting. Equally broad and varied—and more than a century long—is NYB&P's experience in this specialized field. That's why your local NYB&P Distributor is your best bet when you need a conveyor belt for any purpose. He has the know-how—and he has the belt—to assure you the most satisfactory performance at the lowest ultimate cost! Should your requirements be so unusual that a special belt construction is required, NYB&P engineers are uniquely qualified to design and provide it. Ask your NYB&P Distributor for the 32-page Conveyor and Elevator Belting Manual. He also carries these other NYB&P products:

Gilmer V-Belts and "Timing" Belts
Test Special Transmission Belting
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BIMETAL

puts
perpetual
life

in MECHANICAL PRODUCTS' MINI-BREAKER®



Product of
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overload, the excessive heat generated causes the element to bend away from the latch plates on both sides of the center reset plunger. A preloaded return spring then forces the plunger outward while twin extension springs pull the element and the movable contacts back . . . away from the fixed contacts . . . thus breaking the circuit. The circuit is restored by pressing in the reset button.

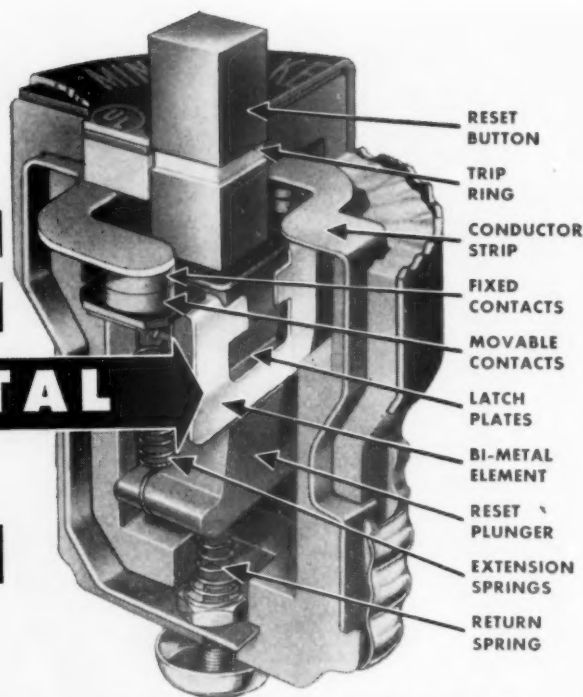
Chace Thermostatic Bimetal is manufactured in 29 types, in strips, coils, random long lengths and welded or brazed sub-assemblies. We also provide specialized tooling necessary to fabricate bimetal elements to customer designs. Before proceeding with your next design, we invite you to consult our Application Engineers, recognized authorities on temperature responsive devices—or write today for your copy of our 32-page booklet "Successful Applications of Chace Thermostatic Bimetal," containing condensed engineering data.



W. M. CHACE CO.

Thermostatic Bimetal

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Experts To Address Materials Handling Conference

A group of 42 speakers, representing many of the outstanding industries in the country, will head workshop seminars at the Materials Handling Conference which will be held concurrently with the fifth National Materials Handling Exposition at Convention Hall, Philadelphia, May 18 to 22.

The exposition, which will be the largest capital goods industrial show to be held anywhere in the country during 1953 and the largest ever held in Philadelphia, will have 3,000 experts on hand to answer visitors' questions, according to Clapp & Poliak, Inc., New York, founders of the show.

The American Materials Handling Society, an organization composed of users of handling equipment, is conducting the conference. The sessions, which will cover five basic aspects of materials handling, will permit each visitor to spend nine hours in a workshop discussion of a single aspect of his work, or three hours on each of three subjects.

This intensive approach has never before been attempted on a national scale, society officials pointed out. In view of the fact that most of those attending the conference will be authorities on the subject in their own right, the sessions are expected to provide many important new ideas on handling problems, it was stated.

Inland Steel Leases Iron Ore Bodies In Ontario, Canada

Inland Steel Company, the world's eighth largest steel company, has leased one of the several iron ore bodies owned by the Steep Rock Iron Mines, Ltd., in Steep Rock Lake, Ontario, Can.. Test drillings indicate at least 50,000,000 tons of ore in the leased property with greater tonnage possible. Ore boats will load the ore at Port Arthur, which is 120 miles nearer the company's steel mills at Indiana Harbor than Superior, Wis., shipping point for Mesabi Range ore, now claimed to be at the stage of short range exhaustion.

Vice president Philip D. Block, Jr., said that, with this acquisition, Inland Steel, which has an annual rated steel making capacity of 4,500,000 tons, "has gained a strong position in iron ore reserves covering its requirements many years into the future without the necessity of going to remote sources to supplement the reserves it already has in the United States."

Now vapor-from-paper

STOPS RUST of Army rifles

Ever degrease a rifle . . . or use grease to protect the metal products you make?

That paper rifle bag you see in the Army photo gives off a vapor inside that prevents corrosion. It *saves greasing* and all the handling and equipment that goes with it. *Saves degreasing*—hours of it! No wonder firms in every branch of metalworking today are using Angier's vapor rust preventive—VPI Wrap. How about *you*?

Get "VPI FACTS" now, from the most experienced name in vapor wraps: **ANGIER CORPORATION**
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Angier VPI Wrap (2 gram) is manufactured to conform to MIL-P-3420

Does *your* management
know about VPI*?

*®—vapor rust preventive.



OLD WAY—2 1/4 hour degreasing job was required before firing.

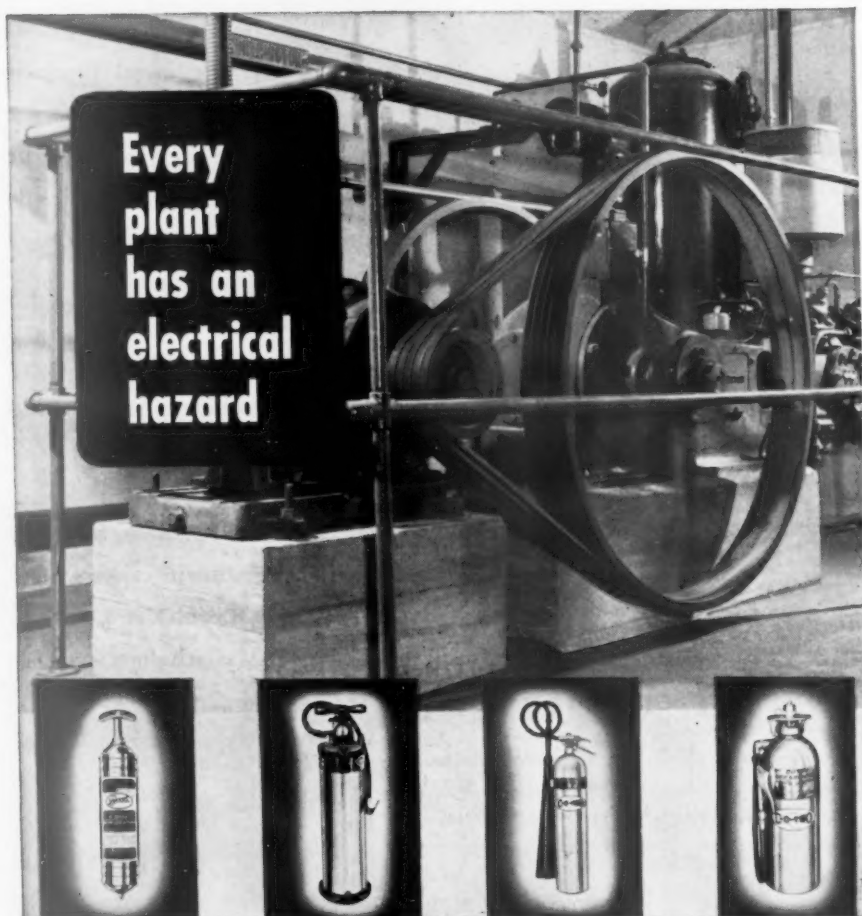
NEW WAY—Rifles, protected by VPI-coated bags, are ready to fire within seconds.

ARMY ORDNANCE PHOTO

SINCE 1895 MANUFACTURERS OF INDUSTRIAL PACKAGING PAPERS

Angier

There's a Pyrene for every fire hazard



These extinguishers are for electrical fire hazards: (L to R) Pyrene Vaporizing Liquid Pump and Pressure Types; C-O-Two Carbon Dioxide Type; C-O-Two Dry Chemical Type.

PLAY SAFE—don't skimp on fire protection

We don't know what *your* special fire hazards are. But we do know that very few industrial plants have all the protection they need. So we urge you to make sure *you* have enough and we urge you to get the best. Your local Pyrene jobber has the right Pyrene* equipment to cope with any fire hazard you may have—everything from hand extinguishers to automatic systems. He also carries Pyrene parts and recharges. One call to him, one purchase order, one invoice will take care of any need you may have. Write us for his address.

*T.M. Reg. U.S. Pat. Off.

Portable fire extinguishers: vaporizing liquid, soda-acid, foam, cartridge-operated, carbon dioxide, dry chemical, and pump tanks • **Wheeled extinguishers:** soda-acid, foam, carbon dioxide, dry chemical types • **Air foam play pipes** • **Systems** for special hazards



PYRENE MANUFACTURING COMPANY
578 Belmont Ave. Newark 8, New Jersey
Affiliated with C-O-Two Fire Equipment Co.

Prefabricated Steel Buildings Cut Costs, Increase Output

The elimination of predesigning, planning and construction costs, in addition to the speed of erection of prefabricated steel buildings, have helped quadruple some manufacturers' business in the last three years. Continuing design improvements are often available to the prospective purchaser and the adaptability of design ranges from plants, hangars and warehouses to administration buildings.

Replacing older or demolished buildings has also caused manufacturers of "package" plants to handle increased business. The Luria Engineering Company of New York was called upon to provide a new building to replace a New Jersey plant that had been leveled by an explosion. Before the rubble of the old building was cleared away, a new steel building was on hand and production was resumed in a relatively short time.

1 1 1

Du Pont Begins Expansion of Titanium Sponge Production

Expansion of Du Pont's titanium sponge producing facilities is now under way at its Newport, Del., plant and scheduled to begin shortly at its Edge Moor, Del., plant. This expansion, undertaken at the request of the government, will yield an estimated 13,500 additional tons of titanium sponge during the next five years.

At Newport, preliminary layout work and topographical surveys have already been completed, with grading, fencing, road and railroad siding construction now under way. New units to be erected at the Newport site include a main manufacturing building, power house, office building, laboratory, finishing building, and change house. Work is scheduled for completion around the middle of 1954.

No new buildings are planned at the Edge Moor plant. Construction, which will also start in the near future, will consist mainly of additions to existing structures.

Titanium metal has great potentialities for defense as well as commercial applications. Alloys of the metal already developed are stronger than some present steels and 40 per cent lighter. The titanium alloys are highly corrosion resistant, especially to salt water. Prior to the outbreak of the Korean war, only pilot-plant quantities of titanium sponge metal were available.

Self-Locking Self-Sealing

LOK-THRED

IN ANY SIZE STUD, BOLT OR SCREW



Machine
Screw



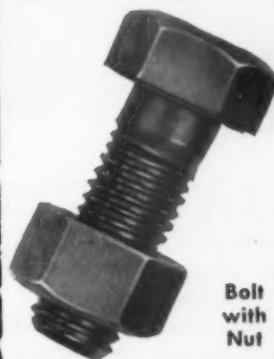
Pipe
Plug



Stud



Cap
Screw



Bolt
with
Nut

Look into **LOK-THRED**, and the important advantages it can offer your products. For example, **LOK-THRED** can end the difficulties you may be having with involuntary loosening of fasteners . . . leakage of lubricants or other fluids via ordinary threads . . . or even a combination of both.

LOK-THRED seals as it locks . . . reforms the receiving thread into an intimate metal-to-metal contact with itself to eliminate every void between the mating threads.

LOK-THRED can't shake loose, either . . . actually becomes tighter in service when it is subjected to severe vibration and jarring. Yet it is fully reusable . . . requires no selective fits . . . can be used with ordinary tools.

National offers **LOK-THRED** and its unique advantages in all sizes of studs, bolts or screws. Why not take a detailed look at all the features of **LOK-THRED** . . . write today for National's booklet containing complete engineering and application data.

THE NATIONAL SCREW & MFG. COMPANY

Cleveland 4, Ohio

Pacific Coast: National Screw & Mfg. Co. of Cal.
3423 South Garfield Ave., Los Angeles 22, Cal.



FASTENERS

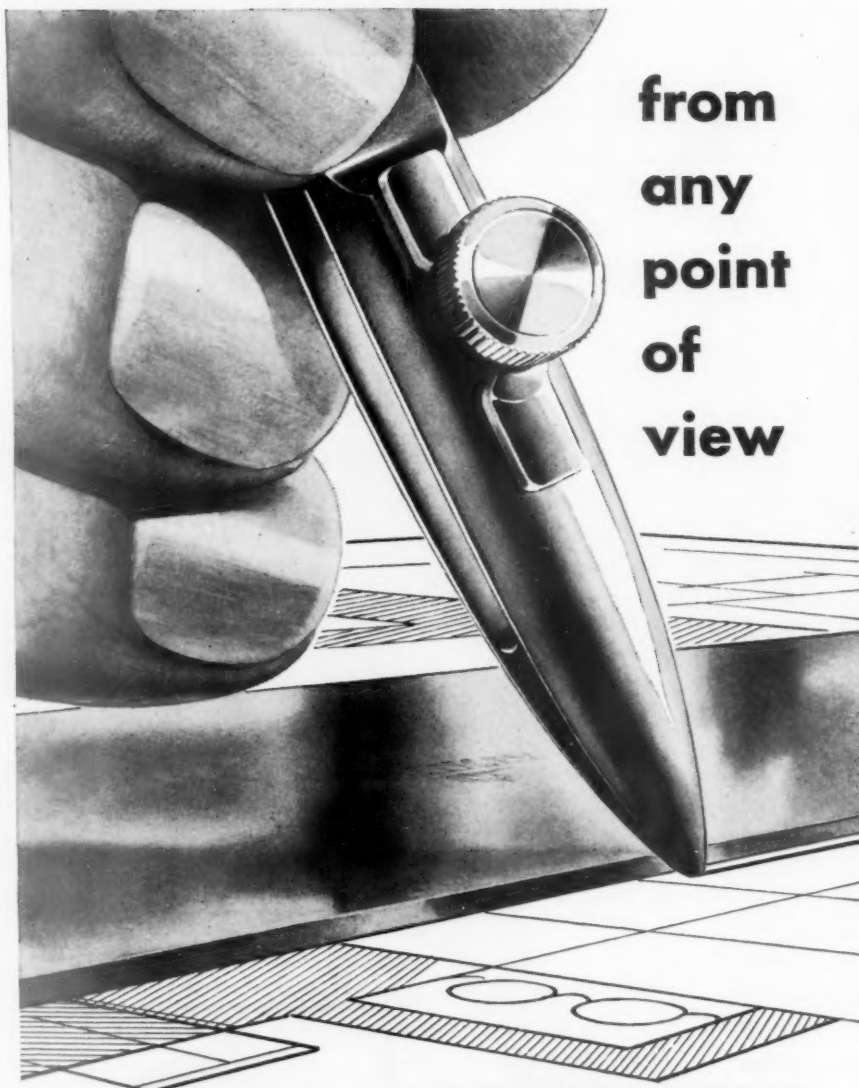


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from
any
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of
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Arkwright Tracing Cloths are made to help you do your best work more easily.

Arkwright cloth saves time. There's never a pinhole, uneven yarn or other imperfection to slow you down.

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Wouldn't you like to see for yourself why Arkwright Tracing Cloth is best? Write for samples to Arkwright Finishing Co., Industrial Trust Bldg., Providence, R. I.

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AMERICA'S STANDARD FOR OVER 30 YEARS



Broadened Horizons For Purchasing

(Continued from page 110)

highest degree of the definition, and more indefinite and difficult of description. It seems to me, however, that it is right here that purchasing, and those who measure up to its widest potential, attain executive status.

Woodrow Wilson said, "There is no education without moral value." Discipline of character seems to me to mean the carrying over of the recognized personal virtues into business activity. The purchasing agent who has one set of values and manners for his job and another in his outside activities risks the inevitable levelling (downward) of his entire character.

In acquiring skill and knowledge of purchasing, the background should be laid for discipline of character. The purchasing executive must, in addition to his technical job qualifications, be a man of high moral and ethical principles. He must have human understanding and diversified interests far beyond his purchasing responsibilities.

To be an executive, an administrator, the manager of a major function of his company, the purchasing agent must think in the broader terms of management. He is in a particularly favorable position to influence his company's public relations, but he must know its overall objectives, its position in the community, and its contribution to the national economy.

No purchasing man has to be told how much Government controls and regulations affect his purchasing today. With political action influencing to such a major extent the economic trends, the purchasing agent must know something about politics. It is becoming increasingly important to study both national and world economic conditions.

Are we good citizens, and do we meet our civic responsibilities? How many of us know just how our political parties are organized from the grass roots—precinct, town or city, county, and state? If we do not broaden our horizons, and actively interest ourselves in Government, we cannot expect our elected representatives to reflect credit on our intelligence or character.

Of three men digging in the ground, one described his job as digging a hole, the second as preparing a foundation, and the third as build-

(Please turn to page 362)

The U. S. Steel Supply team that gives you *personalized service*

He specializes in solving
your technical troubles!



OUR product specialist is qualified to give you expert advice on the selection of steel for a particular purpose, and on the choice of tools, equipment and machinery that can frequently speed up your production. He can interpret and develop specifications to fit your needs, and he can advise on the methods of handling the various kinds of steel and steel products during your production operations. Often he can save you time or money, or help you meet a delivery date by suggesting alternate materials for your product. And

at his finger tips is the latest information about government restrictions, expected availabilities of special grades of steel, and similar subjects.

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UNITED STATES STEEL

APRIL, 1953

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Streamline Production with Riverside "PACKAGED WIRING!"

The biggest single production saving you can make is to cut the cost of assembling your product . . . and that's just what a specially engineered Riverside wiring harness can do for you! These neat "packaged wiring systems" reduce the most complicated product wiring to its simplest form, a *single unit installation* that can be installed quickly, easily and accurately by unskilled labor . . . they streamline production *and* product!

We design and manufacture harnesses in any required wiring arrangement, with such attached units as terminals, relays, limit switches, push-button stations, circuit breakers, junction blocks, etc. They meet the most rigid requirements, including those for aircraft and ordnance, and we have produced them for leading manufacturers of electrical and electronic equipment. We can do the same for you!

Our Engineering and Experimental departments are at your service for the solution of all of your product wiring problems. Send prints or details of your problem for prompt engineering recommendations and a firm quotation, without obligation.

Riverside Manufacturing

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362

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Broadened Horizons For Purchasing

(Continued from page 360)

ing a cathedral. What is our overall objective? In the final analysis, it is up to each individual purchasing agent as to the benefit he will derive from the advancement of the purchasing profession, or whether he will keep pace. Let's broaden our horizons.

1 1 1

Face Of The Clock

(Continued from page 96)

is the key to this whole situation. There can be no "hit or miss" operation here.

IX. Missing the Obvious

Paul Hoffman, formerly ECA Director and now head of the Ford Foundation, had a small printed card under the glass top of his desk when he was at Studebaker, that taught a great lesson. It read like this:

"As you are probably aware, an important person at a radio station is the sound effect man. Perhaps you also know that the sound of galloping horses is made with coconut shells, and that the sound of water in motion is made in different ways. It could be the patter of rain on a tin roof, or a waterfall. The sound is simulated with rice, beans, shot, or whatever effect is required.

"The sound effect man was stumped when it was put up to him to reproduce the sound of pouring water from a pitcher into a glass. He tried his shot, his beans, his rice—everything. No luck. Then some one suggested that he try pouring water from a pitcher into a glass. That was it! The obvious!"

X. Making Friends

Only the other day I asked a P. A. what he considered the most necessary thing that had to do with his work. His answer was quick: "Making friends, particularly of vendors." He said, "The boys who represent our vendors get around, and when you need something that is really tough to find, if these boys are friendly they can usually tip you off and help you to solve your problem."

This too takes the form of customer or business relations. Sometimes companies get so big that they forget that it is John Q. Public who ultimately pays the bill. Friendly,

(Please turn to page 364)

PURCHASING



where
MISALIGNMENT

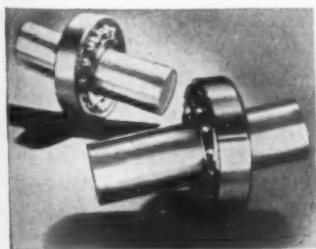
can't be helped . . .

you'll find

SKF

**Spherical
Roller Bearings**

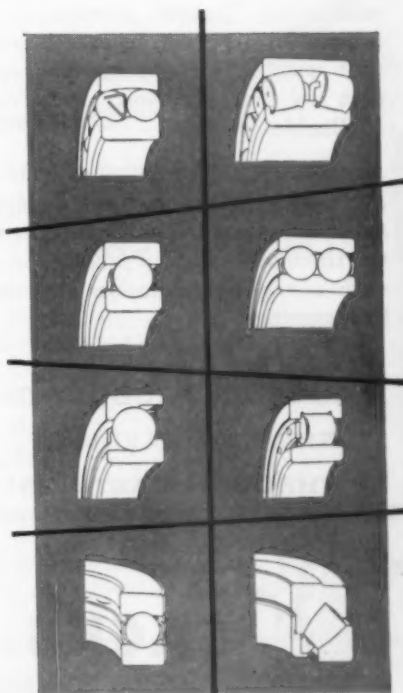
See how the raceway of the outer ring of this SKF Spherical Roller Bearing forms a section of a sphere. This principle of design of the SKF self-aligning bearings compensates for misalignment due to shaft deflection under load, distortion of the foundation, or other causes.



This illustration shows how the principle is also applied to ball bearings, enabling SKF Bearings to operate satisfactorily at high speeds even when some shaft misalignment exists. (The misalignment is exaggerated for clarity.)

Suitable for very heavy radial and thrust loads, SKF Spherical Roller Bearings, like all SKF Bearings, are held well within established tolerance limits, carefully cleaned, protected from rust, and available with cylindrical and taper bores and adapter mountings.

SKF bearings are serving virtually all industry. SKF's unmatched Field and Home Office engineering service helps product designers *put the right bearing in the right place*. **SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.**—manufacturers of **SKF** and HESS-BRIGHT bearings.



SKF'S COMPLETE LINE OF ANTI-FRICTION BEARINGS, PLUS SKF ENGINEERING CO-OPERATION, HELPS YOU PUT THE RIGHT BEARING IN THE RIGHT PLACE.



PUTTING TOGETHER JIGSAW PUZZLES CAN BE AN EXPENSIVE PASTIME!

And that is what is being done—wasting productive manpower in time consuming "jigsaw" assembly. Small fabricated parts can be cast in a single unit with better appearance and less cost by Sacks-Barlow and Newark Malleable.

Ask us to go over *all* of your parts and help you eliminate the costly "jigsaw" operations. You're sure to make worthwhile savings in production costs with our gray, malleable and ductile iron castings.

**GREATER PRODUCTION,
GREATER SAVINGS...
THROUGH CASTINGS!**



SACKS-BARLOW FOUNDRIES, INC.

NEWARK MALLEABLE IRON WORKS
357 Wilson Avenue, Newark, N. J.

Resident Representatives in
New York, Philadelphia, Boston, Baltimore and Providence, R. I.



THIS IS A WASTEFUL
"JIGSAW" FABRICATION
4 different small parts
welded together



AND THIS is the
same part cast in a single
unit ... for a
production saving of 26%!

Face of the Clock

(Continued from page 362)

satisfied customers are a company's most important asset.

XI. Know the Answers

General Somervell tells of an incident that occurred when he was a young lieutenant, stationed at Washington. He happened to be in charge of an important historical building, a former home of George Washington, and he decided to build a fence around the property. He knew that he would need to get an appropriation from Congress, and that he would be asked a lot of questions.

When the time came for him to appear before a Congressional committee, he had the answers and he had them right. He had studied fence building. He knew that the posts should be of cypress, and how far they should be sunk in the ground. He knew, to the inch, how many feet of wire would be required, how many staples it would take, and how long it would take to drive each one. In other words, he knew the problem of this fence from A to Z. He was also aware that, as a young lieutenant, this would bring him out into official attention, and he wanted to appear as a smart fellow.

The committee chairman started the hearing by asking, "Lieutenant, would you mind answering a couple of questions?" Just what Somervell was waiting for! He had planned for this minute, for he knew he had the answers. Then the chairman shot the first question: "What's the idea of building this fence, in the first place?" That was one the Lieutenant didn't have an answer for.

XII. Know the Score

In a nutshell, what we are trying to say is that, most of all, the successful P. A. must know "what time it is"—or in other words, know the score—for when the clock strikes 8, it might not be 8 o'clock.

O. Henry once asked a seagoing friend to explain to him how nautical clocks keep the hours. The writer had in mind a story in which there was a murder; a blind woman placed a person accused of the crime close to her as the clock struck 8. The plot turned on the fact that, at the last minute, it developed that this was a nautical clock, and 8 bells wasn't 8 o'clock at all.

May I close in a lighter vein with another clock story?

Two colored girl servants, who

(Please turn to page 366)

THERE'S A U. S. INDUSTRIAL GLOVE TO MEET **ALL** YOUR INDUSTRIAL NEEDS



#102—Lightweight

#1311—Mediumweight

Heavyweight
#1398—14 in.
#1399—18 in.

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DIPPED INDUSTRIAL GLOVES

- Give maximum safety, comfort and economy.
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- Curved finger construction for comfortable, natural movements.
- Longer lasting.
- Flexibility plus roughened surface for positive grip. (Also available with smooth surface on special order.)
- Available in a full line of sizes, lengths and weights.



#1374—12 in.
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- For all-round hand protection.
- Neoprene-dipped, full-cut, eight-ounce cotton flannel inserts.
- Curved fingers to fit hand's natural shape.
- Easy flexibility.
- Long wearing.
- Protect against cuts, splinters and abrasions.

#1367—Heavyweight
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Knit Wrist Style
One size only.

Gauntlet Style
Heavyweight only.

"U. S." will be glad to analyze your glove needs and help select the right glove for the right job. Call your nearest United States Rubber Company Branch or write United States Rubber Company, P. O. Box 1453, Providence, R. I.

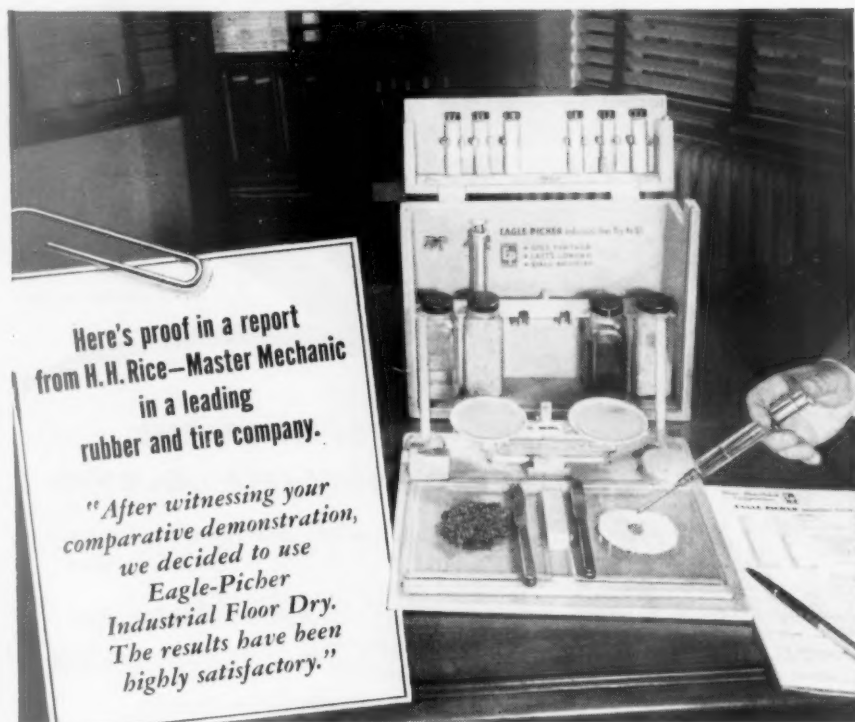


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Products of UNITED STATES RUBBER COMPANY



There's a big difference in floor absorbents



You, too, can witness the difference in floor absorbents! With his portable laboratory, your Eagle-Picher man will analyze your floor absorbent *right in your office*. You may actually conduct the test yourself! Without obligation, of course.

Here's what the test shows—

- The amount of oil and water absorbed for given bulk.
- The cost of your absorbent in terms of absorption and coverage.
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You'll see that Eagle-Picher Floor-Dry is insoluble, chemically inert and non-combustible . . . that it combines light weight for exceptional coverage with light color for brighter, safer working areas. Write today for the full story.

EAGLE-PICHER INDUSTRIAL FLOOR-DRY No. 85



Since 1843

THE EAGLE-PICHER COMPANY

General offices: Cincinnati (1), Ohio



Face Of The Clock

(Continued from page 364)

had recently come North from the deep South, were talking of the new and unusual things they had found in the homes in which they worked.

One said, "We have the wonder-fullest clock in the world at our house. There's a little bird inside, and when it's 2 o'clock, he comes out and says, 'Cuckoo, cuckoo'—twice, just like that. No matter what time it is, that little bird knows just the right number."

The other girl agreed that this was wonderful.

"Well," continued the story teller, "that's not the most wonderful part of it. The most wonderful thing is that it's just a wooden bird."

Don't be a wooden bird.

1 1 1

What Constitutes Delivery?

(Continued from page 87)

delivery of goods in the possession of a party other than the seller, has been enacted in thirty-four of the states, in addition to the District of Columbia, Alaska, and Hawaii.

"Where the goods at the time of the sale are in the possession of a third person, the seller has not fulfilled his obligation to deliver to the buyer unless and until such third person acknowledges to the buyer that he holds the goods on the buyer's behalf; but against all others than the seller the buyer shall be regarded as having received delivery from the time when such third person first has notice of the sale."

The decision in favor of the purchaser for the value of this shovel front at Bath, New York, was upheld by the appellate court which said, in conclusion,

"As a general rule in the absence of a contrary agreement the seller is not bound to carry the goods to the buyer, but the goods must be so placed that the buyer may secure them without lawful obstruction. The seller has failed to deliver the goods where at the time of the sale they are in the possession of a third person who refuses to deliver them.

"Reduced to its simplest terms, the seller's contention seems to come down at last to this: that the buyer bought a lawsuit, and by not carrying it on with the adverse claimant to the shovel front he lost his right to recover his money back from the seller. Under the authorities, this will not do."

*It will serve
on any Panel...*



*Added Evidence
that —*

Everyone Can Count on VEEDER-ROOT

REPORTER AT LARGE . . . that's what you might call this new Veeder-Root Reset Magnetic Counter . . . adaptable to remote counting from machines or processes to central boards or instrument-clusters, wherever you want to put them. NOW . . . what can

your imagination do with these few facts? For the *full facts*, write:

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Montreal 2, Canada • Dundee, Scotland

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furnace treated
cold finished

STEEL BARS

PROVIDE

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THROUGHOUT BARS
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OR DISTORTION
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CLEANING OPERATION
- GREATLY IMPROVED
MACHINABILITY

Wyckoff Controlled Quality
CARBON and ALLOY STEELS
TURNED and POLISHED,
GROUND and, POLISHED SHAFTING
STRAIN and STRESS RELIEVED,
ANNEALED, HEAT TREATED,
QUENCHED and TEMPERED STEELS
WIDE FLATS up to 12" X 2"

SPECIALISTS IN COLD FINISHED STEELS EXCLUSIVELY

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Works: Ambridge, Pa. • Chicago, Ill. • Newark, N. J. • Putnam, Conn.

You can enjoy these and other cost-saving advantages of Wyckoff Furnace Treated Bars by having a Wyckoff metallurgist cooperate with you in selecting the correct grade of steel for your specific requirements. No obligation, of course.

The Law Of Mortgages vs. Liens

(Continued from page 124)

to be inferior to plaintiff's claim."

Hence, the law is well established that a mechanic's lien is superior to an overdue mortgage.

On the other hand, if an automobile is mortgaged, and if the mortgage is properly recorded and not overdue, a garage owner cannot keep possession of the car for an unpaid repair bill because the mortgage is superior to the garage owner's lien.

Promise is Valid

According to a recent higher court, a serviceman's promise to repair equipment without compensation is valid.

For illustration, in *Johnson v. Fortune*, 38 So. (2d) 441, it was shown that one Fortune took his equipment to Johnson for repairs. The station was broken into and the equipment was stolen. It was later located badly damaged, brought back to the station and repairs were made by Johnson amounting to \$738.32. Fortune's demand for delivery of his equipment was refused. He sued the serviceman who refused to deliver up the equipment until Fortune paid him \$738.32 due.

During the trial Fortune proved that Johnson had verbally agreed to repair the equipment without cost to Fortune since it was stolen from his service station. Hence, the higher court held that Fortune need not pay the bill.

This court said further that if the testimony had shown that the equipment had been stolen through negligence of Johnson, he would have been obligated to repair it without cost, anyway.

1 1 1

Dealing With Job Machine Shops

(Continued from page 83)

spent his good money for a new tap of the proper size and if the said tap had failed to produce good results, it was not he but the tap manufacturer who should shoulder the blame. We convinced him of his responsibility only by calling attention to the standard statements in tap catalogs that the manufacturer guaranteed the size and tolerances to which the tap was made but NOT the size of the resulting threaded hole. Fantastic, you say? Yes, but it actually happened.

(Please turn to page 370)

ScotTissue Towels

save more because they do more

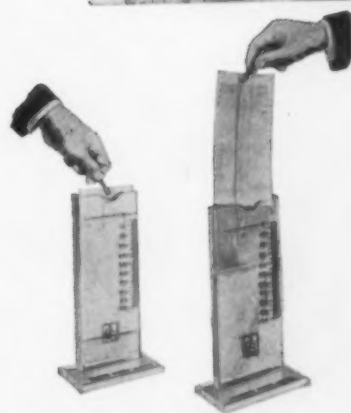
—one dries both hands, saving time,
towels, and maintenance



SAVE MAINTENANCE! Fewer ScotTissue Towels used means less storage space and servicing of dispensers and receptacles. Janitor costs (which account for 90% of washroom expense) are reduced. Switch to ScotTissue Towels now—they save more because they do more!



SAVE TIME! Employees appreciate ScotTissue Towels—they're softer and stronger than ever—you can actually *feel* the difference. And since one ScotTissue Towel dries both hands quickly, there are less washroom "traffic jams." Workers can get back to their jobs a lot faster.



SAVE TOWELS! In the "Thirsty Fibre" Meter Test, a ScotTissue Towel is immersed in water for 20 seconds to show its quicker absorption, greater water retention and wet strength. That's why fewer are used per employee . . . why leading companies use ScotTissue Towels.

THE right kind of washroom is one of the four most important essentials in good working conditions—according to a survey of employees from 400 plants.

What about *your* washrooms—are they clean and modern? A good supply of hot water, soap, and ScotTissue Towels in your washrooms can help to promote friendlier relations.

We'd be glad to give you tested plans and specific suggestions for improving your washrooms.

If you would like a personal demonstration of cost-cutting ScotTissue Towels—the "Thirsty Fibre" Test—just write us on your company's letterhead. Address: Washroom Advisory Service, Scott Paper Company, Chester, Pa.

"ScotTissue," "Thirsty Fibre," "Washroom Advisory Service," Reg. U. S. Pat. Off.

SCOTTISSUE TOWELS

Symbol of the right kind of washroom

ANY Bearing you need from JOHNSON

Here is the motor bearing service you need. Over 300 Johnson Electric Motor Bearings are available from authorized distributor and warehouse stocks. Every one is listed in the Johnson Catalog by number, manufacturer's number, size and motor type. Merely refer to this catalog . . . then call your distributor.

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Write today
for the NEW
Johnson
Bearing
Catalog



Sleeve Bearing Headquarters Since 1901

JOHNSON BEARINGS
Sleeve-B Type

Dealing With Job Machine Shops

(Continued from page 368)

Another supplier made up a quantity of parts that included a dimension of 1.250" plus or minus .002" from a finished surface to the center of a drilled hole. Our inspection showed this dimension to be 1.258", or .006" beyond the high limit. The supplier was very sorry but rebuked us for not placing a statement on the drawing that this particular dimension was "important" and must be held! When I pointed out that every one of the fifteen or twenty dimensions on the drawing were equally important and we expected all of them to be held, he felt himself badly used.

Understanding Needed

These incidents, humorous or otherwise, are of course only side-lights to the main thesis, which is that small job machine shops have a definite place in the production picture. They offer, within their limitations, reasonable prices and prompt deliveries. Moreover, work in the small shop can be more easily watched than in the large and more formalized organizations.

To realize the full value of the small shop it is essential that the purchasing agent who wants to buy machining time shall know exactly what equipment is available, its age and condition. He must also appraise, as accurately as he can, the proprietor's manufacturing experience, and his will to cooperate with his customer.

On his part, the job shop proprietor should avoid taking work beyond the range of his equipment and personnel. He should know, beyond any guesswork, what work-load he is carrying for each machine tool in his shop, for without this knowledge his delivery promises are of little worth. And above all, he should manfully face up to his primary responsibility to inspect his finished work before delivery—not after it has become necessary to reject it.

If he will do these things he will find the customers beating a path to his door.

1 1 1

Industrial Uses Of Nickel-Plating Advance

Industrial uses of nickel-plating authorized under direct defense and defense-supporting applications advanced during 1952 due to the expanded use of heavy nickel protective coatings in place of solid and clad nickel.



Local laws are being enacted to require emergency lighting in the interest of public safety.

WHAT IF SUDDENLY THE LIGHTS SHOULD FAIL

Lives may be endangered and property damaged when lights fail. They do fail... often. For despite all precautions of utility companies, storms, floods, fires and accidents can interrupt normal supply of electric current. Dependable, low cost protection is provided by Exide Lightguards—portable, self-contained, Exide Battery powered. Like larger Exide Emergency Lighting systems, they instantly and automatically take over when normal power sources fail.

There are dependable Exide Batteries for every storage battery need. They provide economical battery power for battery-electric industrial trucks and mine haulage units. Railroads

use Exide Batteries for cranking diesel locomotives, for car lighting and air-conditioning, for powering signal and communication systems.

Exide Batteries perform many vital tasks on ocean vessels and aircraft. They are used by telephone, telegraph and cable companies... radio and television stations... electric utilities... hundreds of other applications. And on millions of cars, trucks, tractors and buses, they daily prove that "When it's an Exide, you start."

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"Exide" "LIGHTGUARD" Reg. T.M. U.S. Pat. Off.

1888... DEPENDABLE BATTERIES FOR 65 YEARS... 1953

ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 2 • Exide Batteries of Canada, Limited, Toronto

Humanize Our Expediting

(Continued from page 89)

ready to help. If you state your position clearly, your supplier, who also has other problems, can rearrange his plans and more intelligently help all.

In many respects the buyer is a liaison, and expediting is no exception. All of us have been confronted with delivery requirements that we know are absurd. This is the bane of every buyer. What to do! Do you immediately transfer the pressure to the vendor. Do you apply every high handed tactic at your disposal, or do you recognize your predicament and in all fairness explain the situation, authorize the necessary additional charges, and request his cooperation? It is obvious that the latter approach is the better one and, if previous contacts were just as fair, it should be most effective. These are situations that call for a calm approach on the part of all, for at best the pressures that inevitably build up are terrific.

Show Your Appreciation

In our personal contacts many of us use the term "thanks" quite generously. I suppose it becomes some-

what of a routine but, even so, there is value to it. In expediting, too, this word "thanks" should be a part of our vocabulary. If done effectively, our "thanks" can be removed from the "routine" and made an effective gesture for better relations.

A Sincere Expression

I am not implying that this expression of appreciation should be a calculated mechanic. Idealism, if nothing else, dictates that it should be a sincere expression. When someone has done a particularly fine job for me, I like to write a letter to one of his superiors and tell him what fine treatment I received. I have found this to be very gratifying to me personally and it usually brings a very warm response from the recipient of the letter.

The Golden Rule

Essentially, good expediting is nothing more than just being fair and honest and treating others as we would like to be treated. A more general acceptance and practice of these principles will improve our whole business environment, for in reality they are the essentials in humanizing all of our relationships.

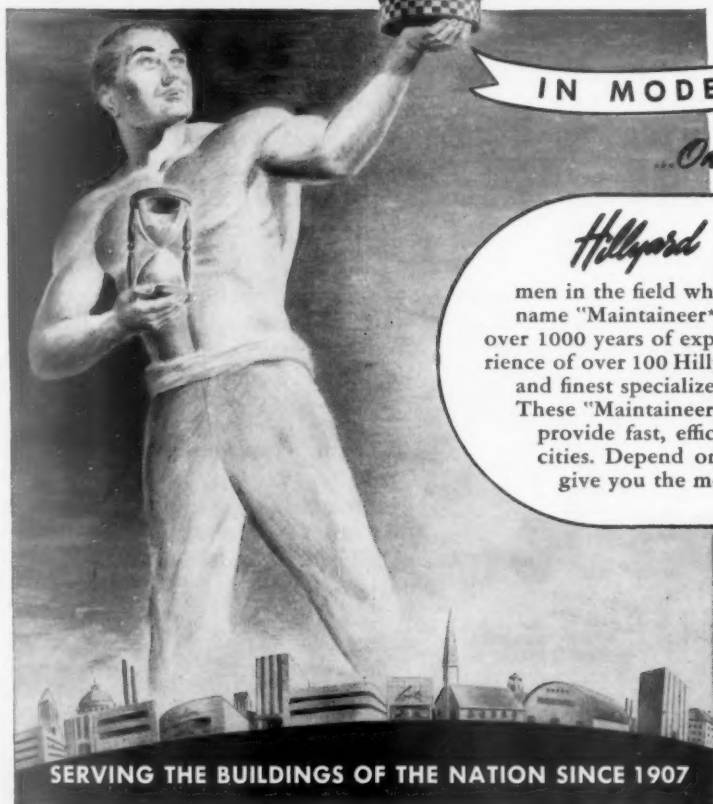
Galvanized Steel Pipe Resists Corrosion In Soil

The National Bureau of Standards has confirmed previous studies that galvanized steel pipe having 3 oz of zinc per sq ft of exposed surface will resist corrosion in many soils which will quickly corrode bare steel. For the Bureau's study, short lengths of both galvanized and uncoated steel pipe, and also plates of zinc, were buried at 15 widely scattered sites in the United States, with a wide range of soil properties, for up to 13 years.

The tests showed that the zinc coatings provided good protection in most of the soils. In one soil in which bare steel pipe was perforated by corrosion after exposure for only a few years, the coating on the galvanized specimen remained perfectly continuous throughout the entire 13-year period. In only two of the 15 soils, both organic, was the zinc coating of negligible protective value.

Analysis of the data obtained in the studies shows that the minimum weight of zinc coating required to protect steel for a minimum of ten years depends on the nature of the soil environment.

1029 YEARS EXPERIENCE



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Hillyard offers you a "giant" source of floor treating knowledge. Hillyard trained floor experts, the men in the field who serve you, are truly maintenance engineers as the name "Maintaineer" implies. They have amassed the amazing total of over 1000 years of experience with Hillyard. Visualize the training and experience of over 100 Hillyard "Maintaineers" bringing together modern methods and finest specialized Hillyard products for every type of floor. These "Maintaineers" are strategically located from coast to coast and provide fast, efficient service from warehouse stocks in principal cities. Depend on him for beautiful safe floors that wear longer—give you the most from your floor treatment budget. *Registered

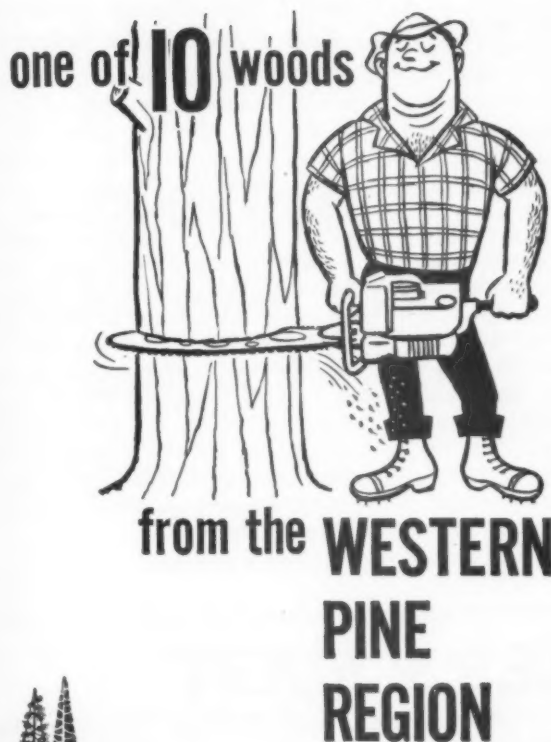
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When weather's against you ...keep dry



Scientifically developed by
U. S. Rubber to protect you on your
job. They're full cut, roomy, for
greater comfort and longer
wear in action.

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- inside fly front
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U. S. SQUAM HAT

- reinforced water-shed brim



U. S. WILBUR RAINCOAT

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BLACK BOOT

- shockproof insole
- short, plain toe

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Ability To Bend Feature New Powder Metal Product

Development of a new iron powder metal having improved ability to withstand high stresses without cracking has been disclosed by A. J. Langhammer, president of Chrysler Corporation's Amplex Division. The new development, Steel Oilite, has several times the ductility of previous iron powder products and makes possible many new uses for such material.

Steel Oilite, Mr. Langhammer said, has physical properties that are comparable to mild carbon steel, such as SAE 1010, 1020 or 1030.

He pointed out that the new product has two to three times the ability to bend (ductility) over other metal powder parts produced by the Amplex Division, which has been a pioneer in the field of powder metallurgy.

Iron powder parts for regular usage will withstand a pressure of approximately 35,000 pounds per

square inch, while the new Steel Oilite withstands up to 70,000 pounds. Moreover, Steel Oilite is not brittle and, therefore, may be bent or twisted without breaking.

The new product, because of its great ductility and strength, can be used, Mr. Langhammer said, for finished machine parts, such as gears, cams, brackets and lever arms, heretofore only of sufficient strength when made from forgings or bar stock. Steel Oilite, while retaining some porosity, is not intended for self-lubricating applications.

Parts of Steel Oilite are produced in somewhat the same manner as other Amplex metal powder parts. A mixture of iron powder is fed into a briquetting press and formed into the exact shape and size. Then the material, at that stage called a briquette, is heat-treated to fuse the metal particles, whereupon they are finished sized again in a press, eliminating the necessity of costly machining operations.

Steel Oilite can be plated by any of the normal processes. It may also be hardened by direct quenching or carburized and hardened, Mr. Langhammer said.

1 1 1

New Liquids Metals Handbook Now Available To Industry

The second edition of the Liquids Metals Handbook, sponsored jointly by the U. S. Navy and Atomic Energy Commission, to stimulate private research and to encourage industry in the development and use of liquid metals is available by writing to: The Editor, Naval Technical News, Office of Information, Navy Department, Washington 25, D. C. The handbook includes summary tables of physical properties, and corrosion bar charts, equations and plots. It also includes chapters on industrialization, utilization, physical, chemical, corrosive and heat transfer qualities of the liquid metals.

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Undisplayed (want-ad style), minimum charge 4 lines, prepaid. Figure forty-four letter spaces (five average words) to a line. Add one line for box number address; replies forwarded without charge. Discount of 10% for twelve consecutive displayed insertions. Forms close 15th of month preceding date of publication.

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Purchasing Agent. Northern California crushed rock and building materials company desires experienced purchasing agent 30-45. Write full qualifications Box 1363, Purchasing, 205 East 42nd St., New York, N. Y.

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ABRASIVES WANTED

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Ass't. P. A. or Buyer. Presently employed Buyer of Construction Equipment & Supplies in NYC. 28 year Management Graduate. Relocate. Resume on request. Box 1369, Purchasing, 205 East 42nd St., New York, N. Y.

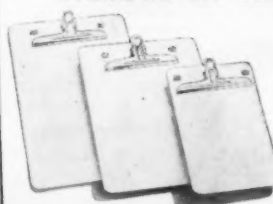
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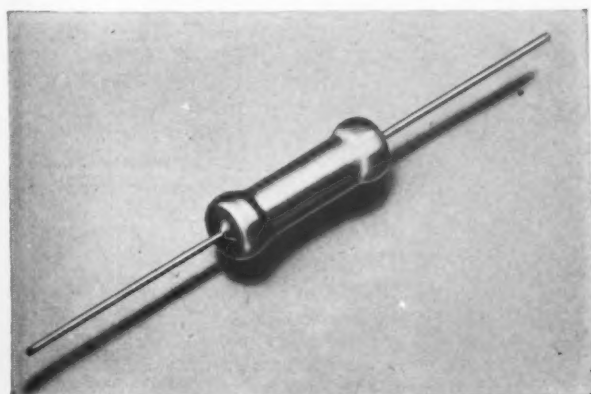
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METAL PRODUCTS ENGINEERING, INC.
4000 Long Beach Avenue, Los Angeles 58, California

"We specified
WARD LEONARD
AXIOHM RESISTORS
 in our
Reflectoscope
 for these three
 important reasons:

- ▶ Stronger anchorage of axial lead
- ▶ Smaller size
- ▶ Full watt rating at high resistance values"

say the design engineers,
Sperry Products, Inc.



WARD LEONARD AXIOHM RESISTOR

A ruggedly built, miniature, self-mountable Vitrohm resistor of the wire-wound power type. All wire leads are hot tin-dipped for ease of soldering.



SPERRY REFLECTOSCOPE

A compact, portable electronic testing device, the Reflectoscope sends ultrasonic vibrations through as much as thirty feet of solid aluminum and even greater thicknesses of steel and other materials. The vibrations travel through the material under test, and bounce back to the Reflectoscope. There they are converted into electrical impulses and projected on the screen of a cathode ray tube where defects show up in the visible pattern.

A rugged, miniature resistor, able to withstand severe overload, was the requirement for many circuits in the Reflectoscope and, as Sperry's engineers point out, Ward Leonard Axiohm Resistors more than meet that requirement.

Whether your product is a delicate electronic device like the Reflectoscope, or a heavy-duty industrial apparatus, you need an electrical control you can count on. Let Ward Leonard's Engineering Department help you select the right ones. Ward Leonard Electric Company, 50 South Street, Mount Vernon, N. Y.

3-3



WARD LEONARD
ELECTRIC COMPANY
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RHEOSTATS



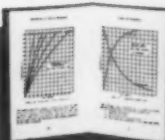
RELAYS



MOTOR CONTROLS



CHROMASTER



Ward Leonard's complete engineering text book, "Handbook of Power Resistors," \$3. per copy.

Result-**E**ngineered Controls Since 1892

LETTERS . . .

SALARY STANDINGS

A problem has come up within our organization regarding salaries paid to purchasing agents, assistant purchasing agents, and other purchasing personnel. It is our thought that you might have on file a survey of average salaries paid to same. If this data is available, we would appreciate receiving a copy to be used as a guide in our own company.

Our department consists of a purchasing agent, assistant purchasing agent, and two assistants. Our dollar purchases total about \$3 million per year. In addition to normal purchasing duties, we are also responsible for the operation of a lunchroom, messenger service, and other similar jobs.

N. P. C. New Jersey

● Replying to this and several similar recent inquiries, we regret that we are unable to supply salary data. The information that we have on this subject is not sufficiently representative to provide any reliable guide. There are wide variations in the scope of purchasing department responsibility, regional salary standards, bonus payment practices, retirement benefits, and other factors, all of which make it impossible to generalize so as to arrive at any significant figures based on purchasing salaries alone. The most reliable source for such information is from the general management associations, which collect and correlate salary data on a broader scale and are in a position to classify this information in relation to other functional positions as well as by size and type of business. The Executive Compensation Service of the American Management Association, 330 W. 42nd Street, New York 36, N. Y., released its third annual report in January of this year, covering some 15,000 executives in 1,850 companies, classified in 46 major industries and 8 size groups. The National Industrial Conference Board, 247 Park Avenue, New York, N. Y., also makes periodical surveys of this nature.—Ed.

POWDER METAL

Recently I have read several articles on the use of powdered metal in the fabrication of miscellaneous parts items. Since this type of manufacture seems to

offer possibilities for considerable savings, we are naturally interested in learning more about it. I would appreciate any information you might have available on how powdered metal is made and, in particular, how parts, etc., are then produced from the powdered metal. It is my thought that this might be adaptable to the manufacture of many mining machine parts required and used in coal industry.

J. L. Witt, Pur. Agt.
Consolidation Coal Co.
Jenkins, Kentucky

● See the article "How Powder Metal Is Made" in the January 1953 issue of *PURCHASING*, p. 96. Also, on page 142 of the June 1949 issue, the article "Powder Metallurgy Is Basis of Substantial Savings", supported by case histories on six representative parts showing cost reduction of 30% to 50% as compared with previous production methods, plus additional advantages in certain physical properties. Also, on page 294 of the October 1950 issue, an announcement of standards of terminology and test specimens adopted by the powder metal industry. More detailed information is available from the Metal Powder Association, 420 Lexington Ave., New York, N. Y.—Ed.

FOUR-STAR MOVIE

Just a note to let you know that we really appreciated having the film "Industrial Purchasing" shown at our monthly meeting here in Cedar Rapids. We had many good comments on this film, and thought you would like to know that it is one of the best films ever shown at our meetings. We are sure that every purchasing group should see this very educational film.

J. J. Dolan, Asst. Pur. Agt.
Link-Belt Speeder Corporation
Cedar Rapids, Iowa

● Enthusiasm is still running high for this dramatic and informative documentary film of a modern purchasing department in action, which is being viewed each week by about 20 industrial purchasing, sales, and management groups. To secure the film, without charge, for your Association meeting, sales or purchasing department conference, write to *PURCHASING*. Give us about 60 days notice so that we can arrange our booking schedules to meet your preferred date.—Ed.

TRAVELING REQUISITION

We have been requested to establish a Traveling Purchase Requisition system for all purchased parts. On these cards we intend to show the purchase production schedule number, requisition date, date wanted, quantity, date placed, purchase order number, vendor, delivery promised, part number, weight each, account number, quantity per unit, cost each, maximum-minimum buys, approximate years usage (which covers production and repairs), as well as a listing of possible vendors showing their names, quoted price, date quoted, shipping costs, and other remarks.

Any suggestions you are in a position to offer will be greatly appreciated.

G. H. Dickinson, Pur. Agt.
The Oliver Corporation
Shelbyville, Illinois

● The system contemplated usually embraces two record forms, one of which is used as the "traveling requisition", sent repeatedly to the purchasing department as successive requirements arise, without the necessity of filling in a new form each time, with repetitive data, and returned to stores or requisitioning department when the order has been issued. The second form is the purchase or inventory record, kept permanently on file in the purchasing department. Examples of this dual-form system are illustrated and described in our October 1952 issue (p. 180) and December 1952 issue (p. 96).—Ed.

IDEAS TO SHARE

We read your fine magazine regularly and discuss many of the articles, and have derived much that is good from them. In developing new procedures, we keep in the back of our mind that possibly some day we will have something that is sound enough to hope you will find it sufficiently interesting to be of possible use to others.

P. B. Hoyt, V. P. i/c Purchases
American Car & Foundry Co.
New York, N. Y.

● *PURCHASING's* editors share Mr. Hoyt's hope. One of the greatest services this publication can render to its field is to utilize its editorial pages as a clearing house of purchasing ideas, passing along the successful experience and progressive thought of readers for the benefit of others in purchasing. Contributions of this sort are always welcome. Have you an idea to share?—Ed.